

MoToR BoatInG



A REAL fishingboat has at last been found. Amberjack the fast little cruiser shown above driving through a sea, has been designed and built particularly for fishing and general service for Messrs. H. C. Irons and L. R. Connnett of Ormond, Fla. Amberjack was designed by James Hussey of the Greenport Basin & Construction Company and was fitted with a six cylinder, 200 h.p. Hall-Scott marine engine. The flexibility of this power plant is such that it is possible to regulate the speed from two or three miles per hour when trolling, up to a maximum of 23 m.p.h. when the engine is allowed to do its work.

Amberjack is a happy combination of cruiser, since its cabin arrangement is designed to accommodate two persons, while the very ample cockpit and bridge deck take care of all gear and tackle used for the fishing expeditions, or provide space for an afternoon pleasure run with an agreeable party.

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Some specially designed features incorporated into this boat are distinctly novel. An external circulating water system using fresh water with a cooling tube along the keel, eliminates the necessity of using the turbid Florida waters when cruising in the rivers, which are so filled with floating vegetable matter that engines are shortly put out of commission. Another feature is the very reasonable draft of 26-inches, which permits operation in shoal areas, otherwise inaccessible.

Tests made with the boat under full load conditions and with all the additional gear carried, showed that she was able to do 23.1 miles with the engine turning up 1750 revolutions. By her ability Amberjack will be able to travel far out to sea in order to reach the best fishing grounds, and since this is the purpose for which her owners intend to use her most, her speed will prove a very desirable quality.

VOLUME XXXIII

NUMBER 6

MoToR BoatInG is published monthly by the International Magazine Company, Inc., William Randolph Hearst, president; C. H. Hathaway, vice-president; Ray Long, vice-president; Joseph A. Moore, treasurer; C. E. Forsadick, secretary; 119 West 40th St., New York, N. Y., U. S. A. Single copies, 25 cents. Yearly subscription in the United States and Canada, \$3.00. In foreign countries, \$4.00. When you receive notice that your subscription has expired it is best to renew it at once, using the blank enclosed. When changing an address, give the old address as well as the new and allow five weeks for the first copy to reach you. Copyright, 1924. International Magazine Company. MoToR BoatInG is fully protected by copyright and nothing that appears in it may be reprinted wholly or in part without permission.

Great Lakes



The Twenty-Six
Foot Runabout 23½
miles per hour 4 cyl.
Scripps Model F

\$2950

ORDER NOW FOR EARLY DELIVERY

Frankly we expect there will be a shortage of new boats after June fifteenth. Particularly in high grade runabouts like the Great Lakes 26 footer.

We have a few of this type which can be delivered promptly. If you want a boat to use this summer we advise you to lose no time in placing your order.

Great Lakes boats are known as quality boats the world over. Great Lakes Cruisers are so well known that you may have overlooked the fact that we also build high grade runabouts. But a comparison of the boat shown above - in specifications, finish, speed and price - with other stock runabouts of its size, will convince you that it is the best value on the market today.

*Bulletin B describes the 26 Ft. Runabout
Bulletin A describes the 54 Ft. Cruiser*

Let us mail you these bulletins

Great Lakes
BOAT BUILDING
C O R P O R A T I O N

MILWAUKEE, WISCONSIN

New York Office: 110 E. 42nd Street

Telephone 1093 Murray Hill

Telephone the office nearest you to arrange for inspection and demonstration



GOOD FISHING

Do you remember the day that grandpa called the clan together and took them in his motor boat to the spot where the fish had to be clubbed to keep them from jumping into the boat? A few of them insisted on staying for dinner. And what a dinner it was—cooked on the shore of the lake and seasoned with sunshine and happiness.

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MONHEGAN SUNSET

by

Eric Hudson

Courtesy of International Studio



Photograph by M. Rosenfeld

CHAP Says

YOU MAY HAVE HEARD THIS BEFORE.

I MEAN THAT THIS IS GOING TO BE THE BEST YEAR EVER FOR MOTOR BOATMEN. BUT IT'S TRUER NOW THAN EVER. BOATS AND MOTORS ARE BETTER THAN THEY EVER WERE, AND FOLLOWERS OF THE SPORT ARE MORE NUMEROUS AND MORE ENTHUSIASTIC.

AND THEN WE HAVE A GREAT DEAL TO BE THANKFUL FOR. FOR INSTANCE, THAT THE ALLEGED MERRY MONTH OF MAY IS BEHIND US. IN THESE WATERS AT LEAST, MAY WAS A BAD 'UN. SHE SHOWED A WICKED, STORMY TEMPER, AND DID WHAT SHE COULD TO DELAY THE FITTING-OUT OF BOATS. BUT IF THE LAW OF AVERAGES AMOUNTS TO ANYTHING WE MAY EXPECT FAIR WEATHER IN JUNE.

JUNE SEES THE FIRST LONG DISTANCE RACE OF THE SEASON—THE WINDJAMMERS' CLASSIC EVENT TO BERMUDA. THE ONLY THING THAT I DON'T LIKE ABOUT THIS RACE IS THE OPPORTUNITY IT GIVES THE PENNY-A-LINERS TO REFER TO BERMUDA AS THE ONION-PATCH. ASIDE FROM THAT IT IS A NOBLE RACE, OFFERING UNLIMITED OCCASION TO BOATS AND MEN TO SHOW WHAT THEY'RE MADE OF. AND THEY WILL SHOW THAT THERE IS EXCELLENT STUFF IN THEM, JUST AS THEY DID LAST YEAR.

THE FIRST MOTOR BOAT RACES OF IMPORTANCE ARE THOSE OF THE MISSISSIPPI VALLEY ASSOCIATION, AT PEORIA, WHEN THE FLOWER OF THE MID-WESTERN RACING FLEET GATHERS FOR ITS ANNUAL REGATTA. AFTER THAT THE MOTOR BOAT CRUISERS OF LONG ISLAND SOUND HAVE THEIR INNINGS, WITH CRUISER AND EXPRESS CRUISER RACES FOLLOWING EACH OTHER IN RAPID SUCCESSION. THERE WILL BE RACES AT MIDDLETOWN, CONN., AND OTHERS FROM THE WESTERN END OF THE SOUND TO SHELTER ISLAND, TO BE FOLLOWED THERE BY THE CRUISER CHAMPIONSHIP OF AMERICA, WHICH TAKES PLACE IN AUGUST. THIS EVENT WILL DRAW THE MOST SELECT AND FINEST CRUISING BOATS FROM THE ENTIRE COUNTRYSIDE.

BUT RACES, WHILE SPECTACULAR, ARE NOT THE WHOLE OF MOTOR BOATING. WEEK-DAYS AND SUNDAYS, GOOD WEATHER AND BAD, THE SPORT OFFERS ITSELF TO SEA LOVERS. IF YOU HAVE BEEN SWORN AT RECENTLY BY A TRAFFIC COP, IF YOU HAVE BEEN RUN OVER BY A TAXICAB, OR IF YOU HAVE BREATHED THE DUST OF MAIN STREET, YOU WILL BE GLAD THAT JUNE IS HERE, AND WITH IT THE AQUATIC SPORT OF KINGS.

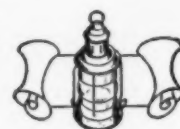


Nantucket, a new 40-footer just completed for Frederick S. Fish, owner of the 120-foot schooner Moby Dick



One of the Newest

Fast 40-Footer Cruiser Designed and Built by The Consolidated Shipbuilding Corporation and Equipped with Twin Screws



ONE of the first of the new boats to make an appearance in New York waters this season was Nantucket, a smart 40-footer designed and built by the Consolidated Shipbuilding Corporation at Morris Heights, New York City, for Frederick Studebaker Fish. Mr. Fish is a member of the New York Yacht Club and also owns Moby Dick, a 120-foot auxiliary schooner. Nantucket is powered with two 180 h.p. Speedway engines which drive her at a speed of better than 25 miles.

The large after cockpit for day sailing is one of the at-

tractive features of the boat. Forward on the port side, the steering wheel and engine controls are located. The engines are located under trunk cabin, forward of which there are two built-in berths, galley and toilet room. In Nantucket the designers have combined speed and comfort. So many of the recent boats of this type have featured speed at the expense of accommodations that the Consolidated builders have developed designs of forty- and fifty-footers which give ample accommodations with excellent speed.



Nantucket is fast. for her two 180 h. p. Speedway engines drive her at better than 25 miles. The twin screw equipment is a safety feature insisted on by the owner



Colonel Jesse G. Vincent is a self-made engineer and one of those men who play as hard as they work. The historic Gold Cup which he won in the 1923 Regatta at Detroit with one of the several boats which he entered and personally tuned for the event

LOOKING into Colonel Jesse G. Vincent's life we find him a stub-toed urchin going to a country school, near Pana, Ill.

Perhaps Dr. George B. Cutten, president of Colgate University, had Vincent, among a group of men in mind, when he said in a recent interview:

"Eighty percent of the leading business men of this country were brought up in rural communities and owe their subsequent success to the thoroughness of the fundamental training they received in the farm homes of their boyhood."

Because, as told, Vincent had his beginning on a farm. He was born in Charleston, Ark., February 10, 1880, and after getting his country school education he entered Cote Brillint Grammar School, in St. Louis, Mo. Graduating from grammar school he started out to gain a general bookkeeping and business education with Smith, Vincent & Co., commission merchants, in St. Louis.

Two years—1897 and 1898—convinced him that handling inert vegetables and alert chickens (this is not meant to be facetious) contained no extraordinary thrill so one day he wiped his pen, shoved aside his high stool and enlisted as an apprentice in a machine and tool shop in St. Louis.

Now he was happy. His employers soon recognized his inventive genius and he was shoved along—sufficiently so that in 1922 he attracted the attention of the Burroughs

17

I am perhaps
what you'd
call a bug
for speed

says

COLONEL
JESSE G.
VINCENT



By NORMAN
BEASLEY

Adding Machine Co., in Detroit and after some dickering he moved to Detroit. This was in 1903. Until 1910 he was superintendent of inventions at the Burroughs plant. Vincent's mechanical genius had always run to gasoline motors. That's what he loved and the automobile industry was beginning to find firm footing in the Michigan metropolis. When approached with a proposition from the Hudson Motor Car Co., to accept a job as chief engineer it didn't take Vincent two minutes to decide. He went.

Two years with the Hudson company and came an offer from the Packard Motor Car Company to become affiliated with its organization. He took that and on August 10, 1917, he became vice president in charge of engineering for the Packard. In the meantime, the fracas in Europe had spread across, and around the world so it was but natural that Vincent with his aptitude for precise things in combustion engines, should become deeply interested in the designing of a new motor.

That became his particular job (Continued on page 84)

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XUM

UNDER the JOLLY ROGER

by PETER B. KYNE

Our star characters, Gibney, Scraggs and McGuffey are once more united on board the gunboat which they had captured after an exciting battle. They embark on a voyage of exploration and find themselves off an island inhabited by savages who make friendly overtures and invite them to dine ashore with them. Gibney and Scraggs accept and go ashore and their further experiences are set forth in this final chapter.

UPON arrival at the beach the two adventurers were met by a contingent of frightful-looking savages bearing long spears. As the procession formed around the two guests of honor and plunged into the bush, bound for the king's wari, two island maidens marched behind the two sea-dogs, waving huge palm-leaf fans, the better to make the passage a cool and comfortable one.

"By the gods of war, Gib, my dear boy," said the delighted Captain Scraggs, "but this is class, eh, Gib?"

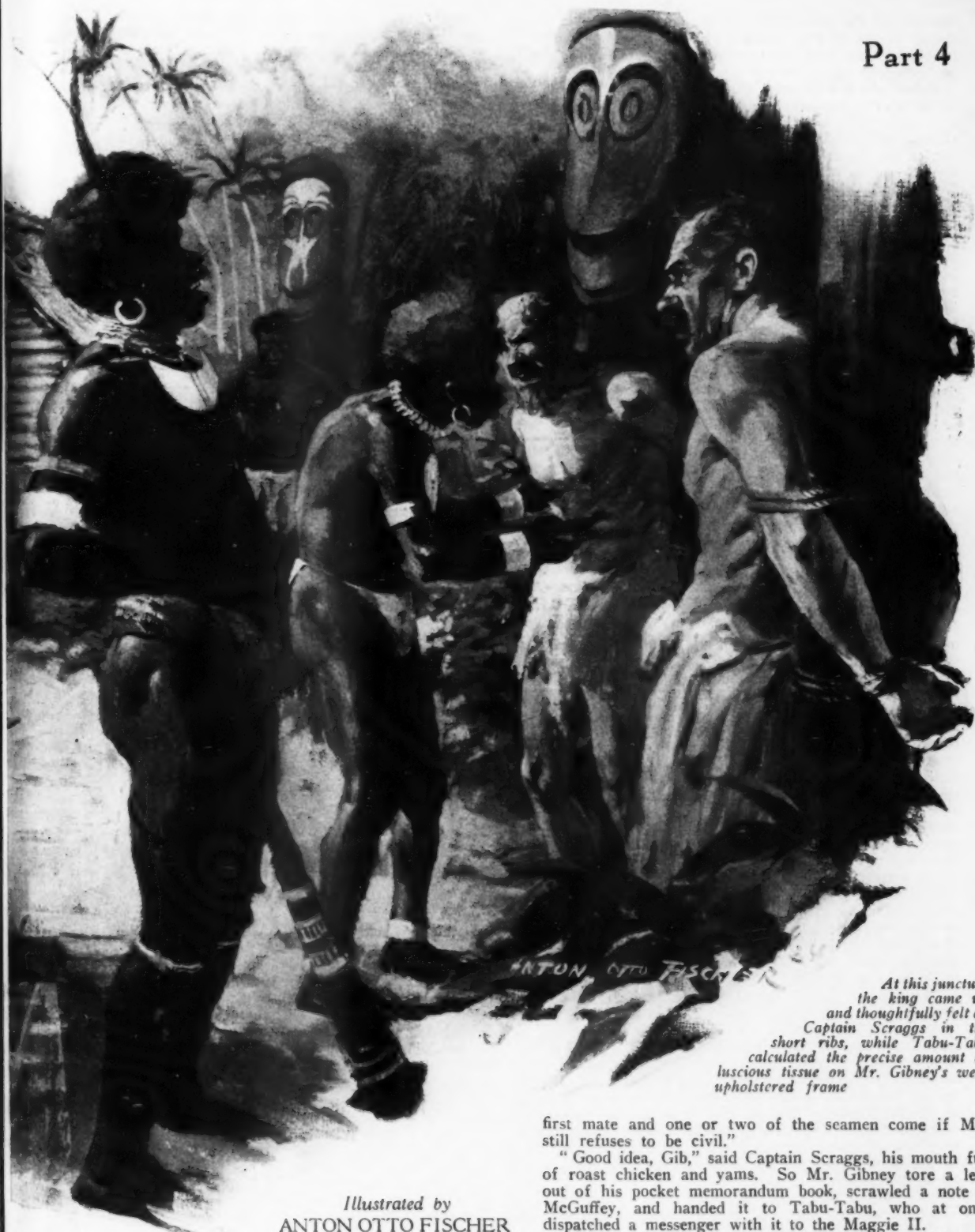
"Every time," responded the commodore. "If that chuckle-headed McGuffey only had the sense to come along he might be enjoyin' himself, too. You must be dignified, Scraggsy, old salamander. Remember that you're bigger an' better'n any king, because you're an American citizen. Be dignified, by all means. These people are sensitive and peculiar, and that's why we haven't taken any weapons with us. If they thought we doubted their hospitality they'd have the court bouncer heave us out of town before you could say Jack Robinson."

"I'd love to see them giving the bounce to McGuffey," said Captain Scraggs musingly. Mr. Gibney had a swift mental picture of such a proceeding and chuckled happily. Had he been permitted a glance at McGuffey at that moment he might have observed that worthy sweltering in the heat of the forward hold of the Maggie II, for he was busy getting his guns on deck. From which it will readily be deduced that B. McGuffey, Esquire, was following the advice of his paternal ancestor and getting an anchor out to windward.

One might go on at great length and describe the triumphal entry of Commodore Gibney and Captain Scraggs into the capitol of Kandavu; of how the king, an undersized, shrivelled old savage, stuck his bushy head out of the window of his bungalow when he saw the procession coming; of how a minute later he advanced into the space in the center of his wari, where in the olden days the populace was wont to gather for its cannibal orgies; how he greeted his distinguished visitors with the most prodigious rubbing of noses seen in those parts for many a day; of the feast that followed; of the fowls and pigs that garnished the festive board, not omitting the keg of Three Star thoughtfully provided by Mr. Gibney.

Tabu-Tabu acted as interpreter and everything went swimmingly until Tabu-Tabu, his hospitality doubtless strengthened by frequent libations of the Elixir of Life, begged Mr. Gibney to invite the remainder of his crew ashore for the feast. Mr. Gibney, himself rather illumin-





Illustrated by
ANTON OTTO FISCHER

ated by this time, thought it might not be a bad idea.
"It's a rotten shame, Scraggsy," he said, "to think of that fool McGuffey not bein' here to enjoy himself. I'm goin' to send a note out to him by one of Tabu-Tabu's boys, askin' him once more to come ashore, or to let the

At this juncture the king came up and thoughtfully felt of Captain Scraggs in the short ribs, while Tabu-Tabu calculated the precise amount of luscious tissue on Mr. Gibney's well-upholstered frame

first mate and one or two of the seamen come if Mac still refuses to be civil."

"Good idea, Gib," said Captain Scraggs, his mouth full of roast chicken and yams. So Mr. Gibney tore a leaf out of his pocket memorandum book, scrawled a note to McGuffey, and handed it to Tabu-Tabu, who at once dispatched a messenger with it to the Maggie II.

Within half an hour the messenger returned. He was wildly excited and poured a torrent of native gibberish into the attentive ears of Tabu-Tabu and the king. He pointed several times to the point of his jaw, rubbed the small of his back, and once he touched his nose; whereupon Mr. Gibney was aware that the said organ had a slight list to port, and he so informed Captain Scraggs.

Neither of the gentlemen had the slightest trouble in arriving at the correct solution of the mystery. The royal messenger had been incontinently kicked overboard by B. McGuffey, Esquire.

Tabu-Tabu's wild eyes glittered and grew wilder and wilder as the messenger reported the indignity thus heaped upon him. The king scowled at Captain Scraggs, and Mr. Gibney was suddenly aware that goose-flesh was breaking out on the backs of his sturdy legs. He had a haunting sensation that not only had he crawled into a hole, but he had pulled the entire aperture in after him. For the first time he began to fear that he had been too precipitate, and with the thought it occurred to the gallant commodore that he would be much safer back on the decks of the Maggie II. Always crafty and imaginative, however, Mr. Gibney came quickly to the front with an excuse for getting back to the ship. He stepped quickly toward the little group around the outraged royal ambassador, and inquired the cause of the disturbance. Quivering with rage, Tabu-Tabu informed him of what had occurred.

Mr. Gibney's rage, of course, knew no bounds. Nevertheless, he did not have to simulate his rage, for he was truly furious. When he could control his emotions, he requested Tabu-Tabu to inform the king that he, Gibney, accompanied by Captain Scraggs, would forthwith repair to the schooner and then and there flay the offending McGuffey within an inch of his life. Suiting the action to the word, Mr. Gibney called to Captain Scraggs to follow him, and started for the beach.

As Captain Scraggs arose, a trifle unsteadily, from his seat, a black hand reached around him from the rear and closed over his mouth. Now, Captain Scraggs was well versed in the rough-and-tumble tactics of the San Francisco waterfront; hence, when he felt a long pair of arms crossing over his neck from the rear, he merely stooped and whirled his opponent over his head. In that instant his mouth was free, and clear above the shouting and the tumult rose his frenzied shriek for help. Mr. Gibney whirled with the speed and agility of a panther just in time to dodge a blow from a war club. His fist collided with the jaw of Tabu-Tabu, and down went that savage as if pole-axed.

Pandemonium broke loose at once. Captain Scraggs, after his single shriek for help, broke from the circle of savages and fled like a frightened rabbit for the beach. One of the natives hurled a rock at him. The missile took Scraggs in the back of the head, and he instantly curled up in a heap.

"Scraggsy's dead," thought the horrified Gibney, and sprang at the king. In that moment it came to Mr. Gibney to sell out dearly, and if he could dispose of the king, he felt that Scraggs's death would be avenged. In an instant the commodore's great arms had closed around the king, and with the helpless monarch in his grizzly bear grip Mr. Gibney backed up against the nearest bungalow. A fringe of spears threatened him in front, but for the moment he was safe behind, and the king's body protected him. Whenever one of the savages made a jab at Mr. Gibney, Mr. Gibney gave the king a boa-constrictor squeeze, and the monarch howled.

"I'll squeeze him to death," panted Mr. Gibney to Tabu-Tabu when that individual had managed to pick himself up. "Let me go, or I'll kill your king."

The answer was an earthenware pot which crashed down on Mr. Gibney's head from a window in the bungalow behind him. He sagged forward and fell on his face with the gasping king in his arms.

On board the Maggie II B. McGuffey, Esquire, had just gotten into position the Maxim-Vickers "pom-pom" gun on top of the house. The last bolt that held it in place

had just been screwed tight when clear and shrill over the tops of the jungle and across the still surface of the little bay there floated to McGuffey's ears the single word:

"Help!"

McGuffey leaned against the gun, and for the moment he was as weak as a child. "Gawd," he muttered, "that was Scraggsy and they're a-goin' to eat him up. Oh, Gib, Gib, old man, why wouldn't you listen to me? Now they've got you, and what in blazes I'm going to do to get you back, dead or alive, I dunno."

McGuffey could hear the cries and general uproar from the wari, though he could not see what was taking place. In a minute or two, however, all was once more silent, silence having descended on the scene simultaneously with the descent of the earthenware pot on Mr. Gibney's head.

"It's all over," said McGuffey sadly to the mate. "They've killed 'em both." Whereupon B. McGuffey, Esquire, sat down on the cabin ventilator, pulled out a bandana handkerchief and wept into it, for his honest Irish heart was breaking.

It was fully half an hour before poor McGuffey could pull himself together, and when he did, his grief was superseded by a fit of rage that was terrible to behold.

"Step lively, you blasted scum of the seas," he bawled to the mate, and the crew gathered around the gun. "Lug up a case of ammunition and we'll shell that bush until even a parrot won't be left alive in it."

"Aye, aye, sir," responded the crew to a man, and sprang to their task.

"I'm an old navy gunner," said the first mate quietly. "I'll handle the gun. With a 'pom-pom' gun it's just like playing a garden hose on them, only it's high-explosive shell instead of water. I can search out every nook and cranny in the coast of this island. Those guns are sighted up to 4,000 yards."

"Kill 'em all," raved McGuffey, "kill all the blasted niggers."

When Mr. Gibney fell under the impact of the earthenware pot he was only partially stunned. As he tried to struggle

to his feet half a dozen hands were laid on him and in a trice he was lifted and carried back of the wari to a clear space where a dozen heavy teakwood posts stood in a row about four feet apart. Mr. Gibney was quickly stripped of his clothing and bound hand and foot to one of these posts. Three minutes later another delegation of cannibals arrived, bearing the limp, naked body of Captain Scraggs, whom they bound in similar fashion to the post beside Mr. Gibney. Scraggs was very white and bloody, but conscious, and his pale-blue eyes were flickering like a snake's.

"What's—what's—the meanin' of this, Gib?" he gasped.

"It means," replied the commodore, "that it's all off but the shouting with me and you, Scraggsy. This fellow Tabu-Tabu is a damned traitor, and his people are still cannibals. He's the decoy to get white men ashore. They schemed to treat us nice and be friendly until they could get the whole crew ashore, or enough of them to leave the ship helpless, and then—O Gawd, Scraggsy, old man, can you ever forgive me for gettin' you into this?"

Captain Scraggs hung his head and quivered like a hooked fish.

"Will they—eat—us?" he quavered, finally.

Mr. Gibney did not answer, only Captain Scraggs looked into his horrified eyes and read the verdict.

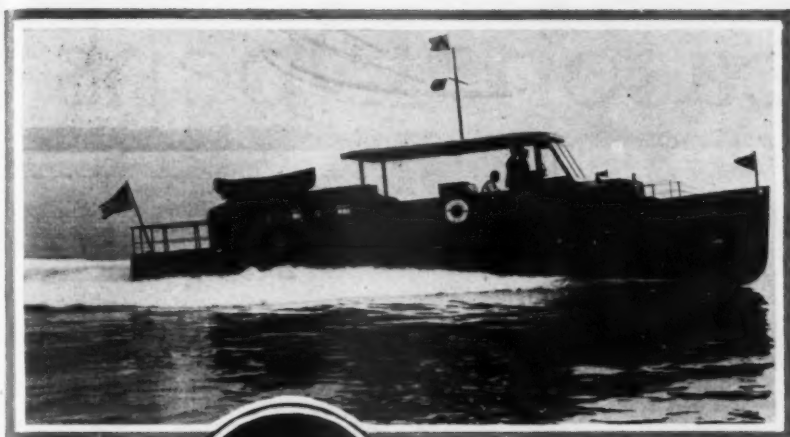
"Die game, Scraggsy," was all Mr. Gibney could say. "Don't show the white feather."

"D'ye think McGuffey could hear us from here if we was to yell for help?" inquired Captain Scraggs hopefully.

"Don't yelp, for Gawd's sake," implored Mr. Gibney. "We got ourselves into this, so let's pay the fiddler ourselves. If we let out one yip and McGuffey hears it, he'll come ashore with his crew (Continued on page 128)

MORE STORIES TO COME

There are still several excellent stories to be published in subsequent issues of *MoToR BoatinG* dealing with the further adventures of our heroes in their search for wealth and fame. Some surprising experiences befall them and the story as unfolded by Peter B. Kyne, will hold your interest to the final period. The next story will be called *The Robinson Crusoe Syndicate* and will run through two successive issues of *MoToR BoatinG*.—Editor.



Corisande Moves Fast

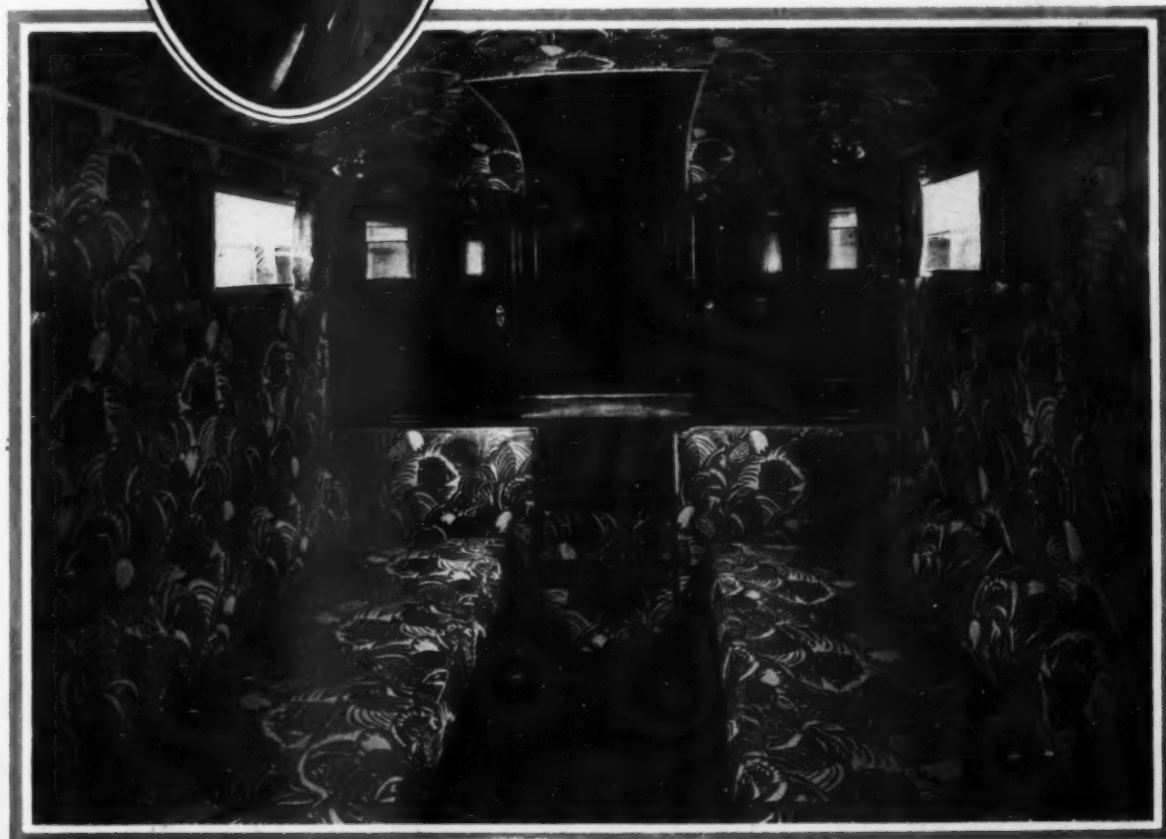
*Fast Express Cruiser
of the Gar Jr. Flier
Type Joins the
Commuting Fleet on
Long Island Sound*

*Corisande has an easily sustained
speed of 30 m.p.h., but can go faster*

*Portion
of the
deck
showing
comfort-
able seats
and
entrances
to cabin*



JUST about ready to begin a new season of fast cruising on Long Island Sound, is Corisande, one of the newest of the Gar Jr. flyers, completed towards the end of last year for Marshall Field, and delivered to him through Cox & Stevens, New York. Many special features were embodied in her construction. On an over-all length of 50 feet, she can maintain a speed of 30 miles per hour without effort. This was guaranteed by the builders, Gar Wood, Inc., and was exceeded by a very considerable margin on her trial trips. The power installation is similar to that of other boats of this type and consists of a pair of 450 h.p. twin six Liberty motors, converted to marine service by Gar Wood, Inc. The bridge is roomy and provides comfortable seating for from ten to twelve persons.



The interior of the after cabin is strikingly upholstered. The unusual feature of covering the entire interior cabin space presents a very novel appearance

The Season Opens-



In far off Honolulu the natives have modernized their large dugout outrigger canoes by the addition of an outboard engine. This boat at Waikiki Beach is used for fishing and surf riding

For reaching the deepest depths of the jungle an outboard engine is essential. The big crocodile shot by Sergeant Maple would never have been captured without the help of the engine

Hold your breath — We'll have him in a minute. When the big fellows bite and the thrill of the strike is on, stand-by with the landing net



Let's Go

The Active Sportsman In Pursuit of His Game In All Waters is Helped on His Way By The Powerful Little Motor Carried On The Stern



A beautiful salmon pass between the Revilla Ggedo Islands. Nature's beauty spots which can be reached in no other way than by boat, and so much more satisfactorily when that boat is equipped with a sturdy outboard engine. The boat, camping outfit, and the inclination, are all that are necessary

When the ice begins to break up on Twin Glacier Lake the eager sportsmen are ready for the first trip of a new spring. The engine is attached to the boat and off they go. In the background is West Twin Glacier one of the most picturesque of Alaskan mountains



HUCK Says

EVERYBODY

Full Directions for the Design, Construction and Launching of a Most Unusual Craft, the Six Footer Guava



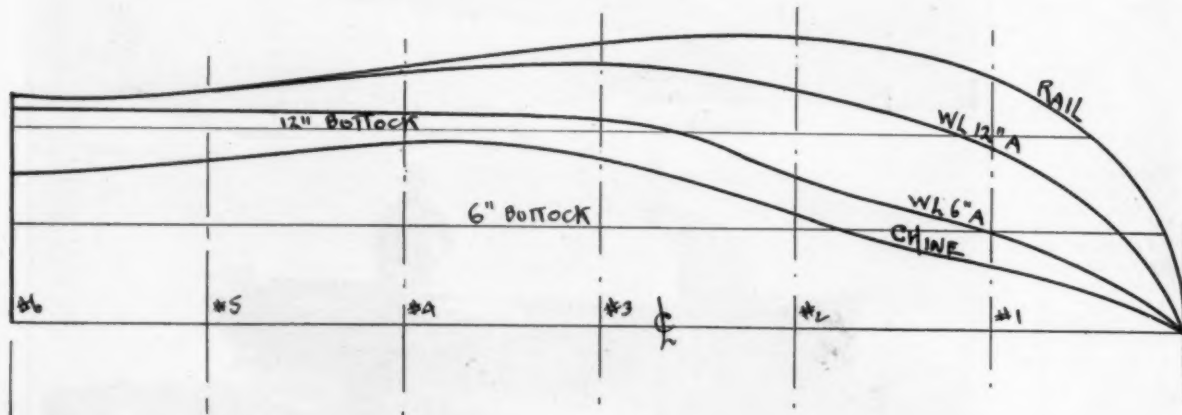
Huck with an expert eye selects the high grade lumber for building Guava

WELL Chap, I gets back to Boston and I gets over the party that you and your low friends, they gives me in New York and I just about is ready to settle down to some useful work when I gets a fresh letter from you and you says why doesn't I call you up before I leaves New York like a gentlemen. Now if you only knows the facts, I only wakes up in time to hook onto the after deck of the one o'clock train just as it pulls out of the dock, so howthehell could I call you up even if I knows you wants me to call you up, which I doesn't. Then you goes on to say what you is paying me for the facts I gives your readers about what speed boats, they is really

Any feller with a supple wrist, he can build this boat. No feller what has never tried it he doesn't know the thrill of creation until he tries it. I thus gives everybody, pretty near, a chance to build this swell little craft, that they can carry in the back seat of the Ford, stand up in the hall closet or sticks it up on top of the piano and fills it with fragrant flowers.

The tools required, they is a minium number for a maxium results. A stout can opener, a heavy corkscrew, and a ordinary meat grinder, they will do in the hands of a feller what is skillful-like but you saves yourself a lot of ripping of the plank if you fits a circular saw to the

like down at Miami. I confesses that although it is short of the two thousand I tells you it costs me to get those facts, I is some surprised at your munificence because I knows your idea of running a yachting magazine, it is to let the advertisers pay in everything and pay your writers nothing. Then worst of all, you says I must write another story, knowing I doesn't know any other stories. So I has been losing a lot of sleep, trying to decide what I enlightens your readers about next and I finally decides I knows a lot more about this designing and building of boats than most of these fellers that writes for your paper so I decides I designs a boat and tells your readers how they should put it together and what they does with it after they gets it put together. So I sets to work and designs Guava.



The lines for Guava, the 6-foot wonder, will astonish you. Scale, 1 centimeter equals .3937 inch

BUILD A BOAT

wife's sewing machine, especially if you kids her into furnishing the power.

Guava it can be built anywhere, but a inspiring atmosphere like in the living room is the best place to start the battil. If you lives in a apartment, you never before has such a opportunity to get even with the low persons who lives next door, who persists in giving gin parties to which they doesn't invite you, or if you is one of those fellers what is trying to get out of his lease, all you has to do is to work right late into the night on her. The landlord, he will be very glad to give you the air by the time you gets her keel laid.

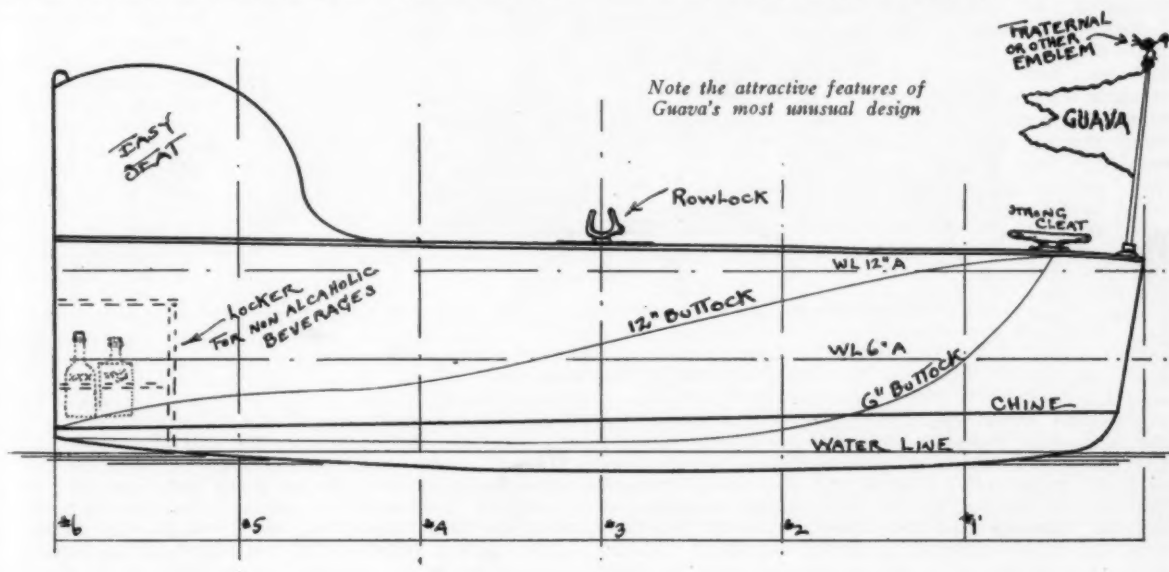
For materials, you orders to start with 2000 feet board measure of oak planks $1\frac{1}{2}$ inches thick. Some of you wise guys who thinks you knows it all about boatbuilding, you will think I makes the plank a trifle heavy, but you never knows when you is going to hit a rock, and besides, I always has been a advocate of heavy construction for everything but women and brains. You only needs about 100 feet of this lumber to actually use in Guava but the average amature, he cuts up his stock regardless and I figures he needs about 1900 feet to saw up wrong before he settles down to serious work. I has a friend a trustee he calls himself. Some years ago, when I builds Kex II he was desiring to help or something—I never determines his real motives—he spends six hours of time and he chews up 211 feet of stock trying to fit a piece of electric light moulding between two partitions what was only twenty inches apart. After awhile his hand it slips—he saws off a piece a inch short



Huck's well equipped work shop in which he sometimes does some useful work

of what he marks it and he finds it fits but I nearly has nervous prostrations. In fact if you is a trustee or what they calls a successful corporation lawyer or if you is higher up than fourth vice president in some solvent bank, I strongly recommends you leaves Guava alone, as the limitation of ability in such fellers is appalling. They can't do nothing useful.

Besides the oak, you needs a few natural crooks for the frames—not some of these New York Citizens we reads so much about in the papers, you understands, but natural hackmatack ones—wooden ones. You probably feels happier to buy a large supply of nails, spikes, screws, rivets



Note the attractive features of Guava's most unusual design



The amphibious Huck, hard at work, with his left hand he types the story while the right hand prepares the design

and other doings but I advises you whatever you buys, it ain't what you needs when the time comes and you might so well makes up your mind that you has to make a trip to the hardware store daily anyways. But one thing that you does need without doubt is a lot of caulking cotton and seam composition. I don't care how hard you tries, you leaves some awful cracks in your planks and I knows before-hand, you spends a lot of time driving in the caulking and gobbing up the seams with goosum.

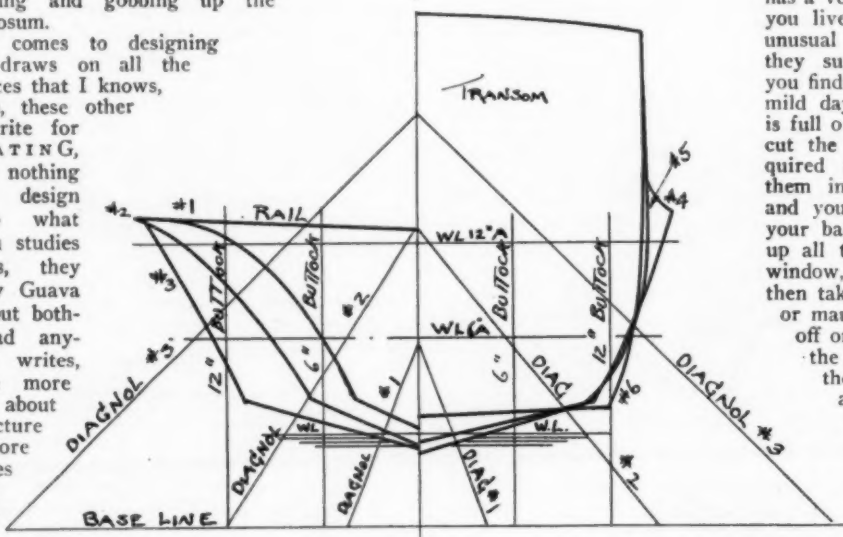
When it comes to designing his boat, I draws on all the arts and sciences that I knows, and I repeats, these other birds what write for MoToR BOATING, they knows nothing about yacht design compared to what I does. You studies the drawings, they tells you how Guava is made without bothering to read anything that I writes, in fact the more you knows about naval architecture and the more you examines the drawings the more impressed you gets. You really doesn't need no instruction if you follows those lines careful-like.

You notes that she somewhat resembles the delicate outline of the Colonial crib in which all our forefathers was so successfully raised. You notes that she has a dash of the Spanish Caraval in her that enables Columbus to discover America and that makes the oil investigation and other political vaudeville possible. You notes that she has a V bottom and then none of these smart aleck naval architects can kick and which makes

a handsome prize to anyone who builds this boat, goes to sea in it and lives to come back and claim it. Instead, I gives you a few impertinent suggestions pertaining to building this boat, from my long and bitter experience. What troubles the amature most is steaming of the planks. Guava she has a flare the like of which aint never been seen before on any boat. If you ever fits the plank to her,

you does more than I expects is reasonable but you has a very dry seaboard. If you lives in one of those unusual apartments where they supplies steam heat, you finds that on particular mild days, the pipes, they is full of it. After you has cut the planks to the required shapes, you takes them into your bathroom and you lays them across your bathtub. You caulks up all the cracks in your window, if any, and you then takes a large hammer or maul and you smashes off one of the valves on the radiator, and leaves the bathroom immediately if not sooner, and shuts the door behind you tightly. Eventually the steam pressure it fails, at which moment, be it day or night, you again enters the bathroom, seizes a plank and rushes out before any of the falling plaster, it conks you on the skull. With the aid of some heavy C clamps, which by this time you finds you needs, you attempts to crowd the said plank up against the ribs of your hull. I warns you to observe great care not to stand in line with the said plank, for if one of your clamps, it slips, which it probably does, you gets a cracked patella at the best, and at the worst you gets violently ejected through the window and falls several

(Continued on page 128)



The wonderful sections of Guava, note particularly she is designed to float on a heavy dew



The 35-foot Sea Sled cruiser powered with two sterling Dolphin engines which can drive her close to 47 m.p.h.

Newest SEA SLED CRUISER is Speedy

SPEED and endurance trials carried out at Mystic during the early spring with a new 35-foot Sea Sled cruiser have demonstrated the absolute reliability of this type of boat, and its remarkable speed and seaworthy qualities. This boat fitted with a comfortable stateroom, two berths, full head room, and toilet and galley is a new type developed by the Sea Sled Company, and the improvements in the hull were apparent when the trials were made.

Between the cabin and engine room is a bridge deck with all controls and a thwartship seat the full width of the boat. The engine compartment is further aft, and a second cockpit at the stern. The machinery equipment is two Sterling Dolphin engines installed in the engine space.

The requirements of the owner were for a sustained high speed, and a reasonably high working speed in rough water. The guaranteed speeds being placed at 30 m. p. h. with a full fuel load and 36 m. p. h. with the boat running light. Very exhaustive tests were made after the completion of the boat in order to determine exactly what its capabilities were. It was found that the boat was much softer in action in a seaway at any speed, than any previous craft of the same type which this company had built.

The maximum speed attained was made in slack water against the wind at 1,930 revolutions and resulted in an average speed of 46.57 miles. This was made with a weight of 14,500 pounds.

Remarkable Tests Carried Out in Open Water Demonstrate Speed and Seaworthiness of Improved Type Craft

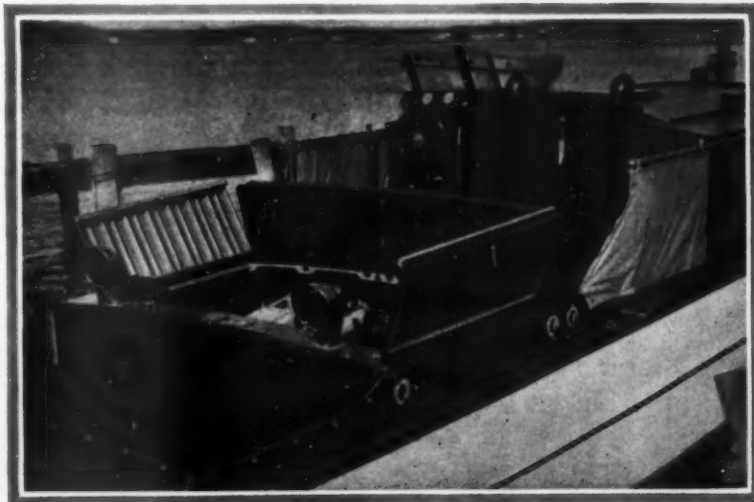
Its weight during the tests with a full fuel load and four or five passengers was over 16,000 lbs. Running with 100 gallons of fuel, instead of making 36 miles, this seven-ton craft made nearly 47 m.p.h. with the engines turning at 1,930 revolutions. Later progressive speed trials, with a heavy fuel load were made, beginning at 1,150 revolutions which produced a speed of 22 miles, and carried

through with uniform increases of 100 revolutions until 42.5 miles were attained at 1,800 revolutions.

During these tests between 200 and 300 gallons of fuel were carried with three men in the crew. At about half throttle or 1,600 revolutions average, a speed of 36.99 miles was secured. Following this sixteen men were taken aboard or an additional weight of 2,600 pounds. The boat was then run over the same course at the same revolution rate (1,600),

and the speed was found to be 36.3 miles. The addition of 2,600 pounds to the useful load had decreased the speed only 0.69 miles. The load carrying efficiency of this boat can thus be seen to be extremely high, with very slight falling off in speed, due to the increased load carried.

Between the first and last of the speed tests, seaworthiness trials were carried out in the vicinity of Race Rock in a very stiff 36-mile gale. During this the boat proved very steady and dry, and was able to maintain speeds between 30 and 37 m.p.h. under the very bad sea conditions which existed at the time of the trials. The boat's performance added a distinct step forward in Sea Sled design.



The compact engine compartment and cockpit spaces on the 35-foot Sea Sled cruiser



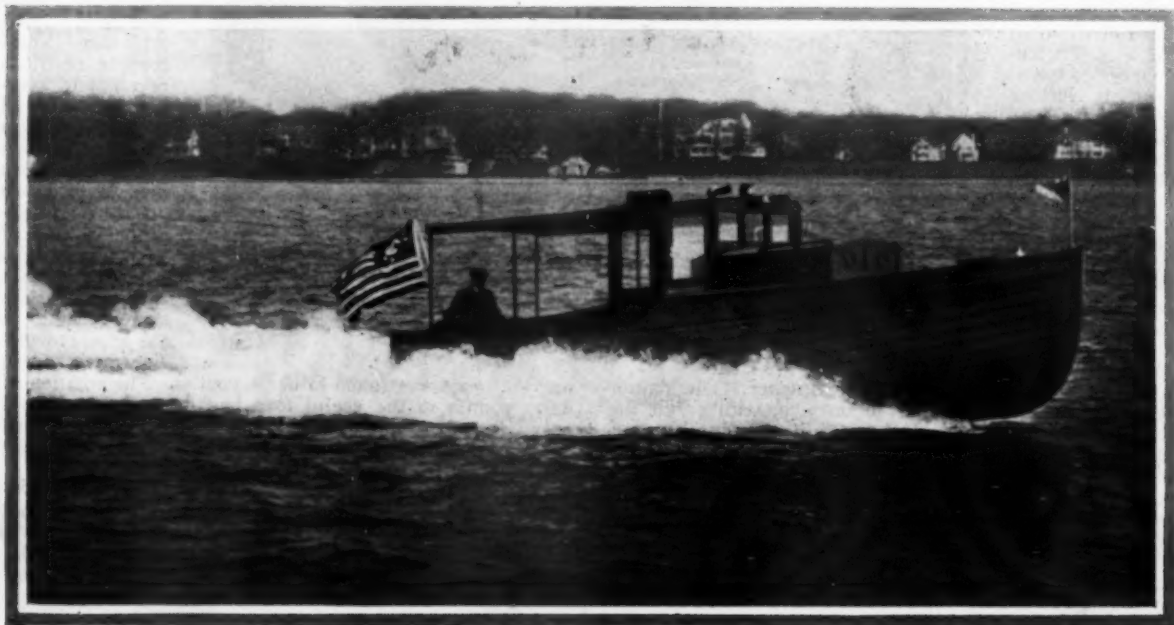
The construction of these boats is substantial throughout, the planking being white cedar copper fastened on oak frames. Mahogany trim has been used throughout. The usual equipment for a small cruiser is carried and the comfort of a cruiser obtained with the speed and other qualities of a fast runabout. Duplicates of this boat fitted with other engines are under construction

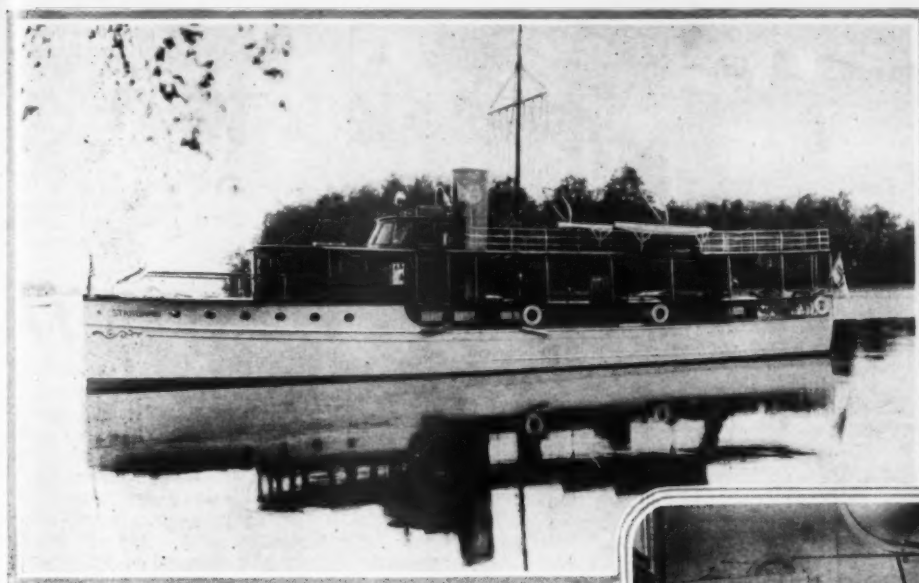


As originators of the lap strake type of small boat construction, the Red Bank Yacht Works are quite proud of the newest of their line which has just been completed. This 30-foot cruiser built for Roland Douglas of Greenwich and New York, has been fitted with a 200 h. p. six cylinder Hall-Scott marine engine, and has made a speed of 28 miles without being forced.

Fast Dory Type Cruiser

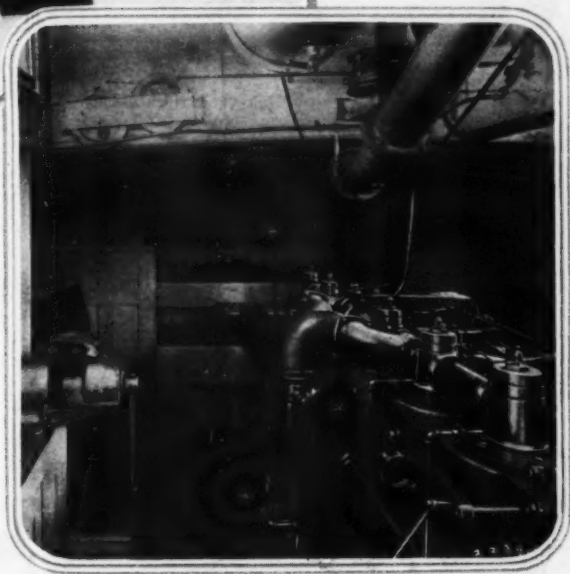
Popular and Seaworthy Craft of a New Design Brought Out by The Red Bank Yacht Works





The Finnish yacht Standard is a 72-foot by 13-foot steel hull built at the Warkaus shipyard for Walter Ahlström

Her power plant is a six cylinder Standard engine of 150 h.p. turning about 400 revolutions and driving the boat at close to 12 knots



The FLAG SHIP of Finland's Yachts

New Craft Built Abroad Shows the Trend of American Design

THE shipbuilding industry of Finland has glorious traditions to look back to for as early as the seventeenth century its sailing vessels crossed the Seven seas. These traditions are still being followed in the construction of modern vessels, and the new cruiser Standard recently completed for Walter Ahlström at the Warkaus Shipyard, is an excellent example of their craftsmanship. The design was prepared by John Carlström, working under the supervision of the owner who is the managing director of the shipyard.

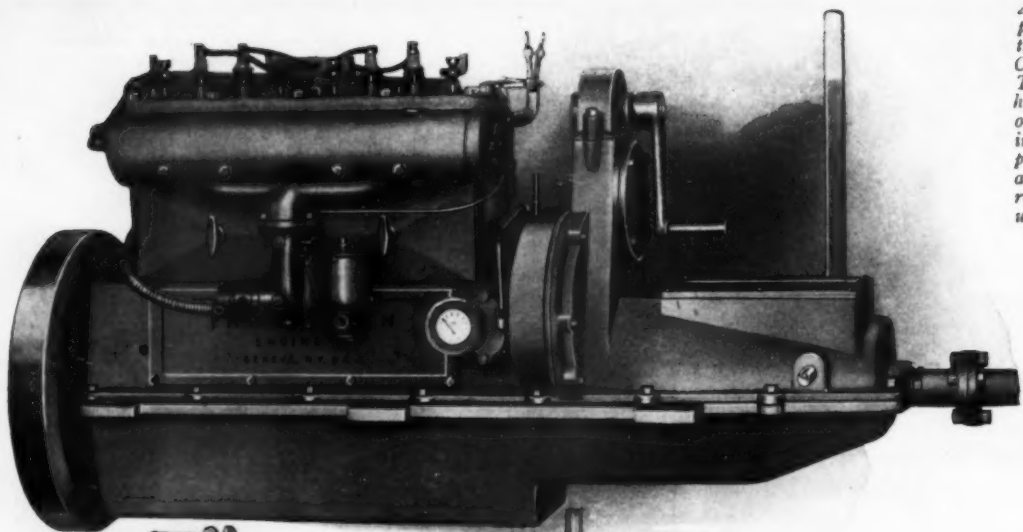
This new boat is 72-feet in length with a beam of 13-feet.

The hull is entirely of steel and fitted with four water tight compartments. The exterior trim is of mahogany with decks of Oregon pine. The boat has been very elaborately fitted and furnished to a degree which is unusual in this country. The deck house forward is used for navigating purposes and from this one can descend into the forward saloon, which contains sleeping quarters for five persons. An abundance of locker and wardrobe space is provided.

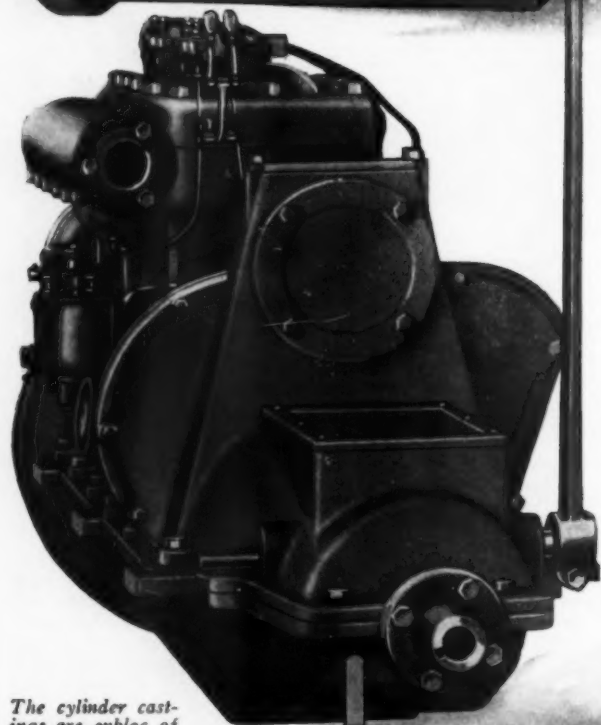
Electricity is used throughout for lighting purposes, and this is supplied by a Delco generator and batteries. An automatic telephone system is installed by means of which all parts of the boat are always in communication. A hot water heating system is also carried. The motive power is a six cylinder Standard engine made by the Standard Motor Construction Company which develops 150 h.p. at 400 revolutions. The speed is reported as 11.8 knots.

Interior of the saloon showing the elaborate furnishings and also the piano. This room serves both as a dining and music room





A new four cylinder unit power plant developed by the Fay & Bowen Engine Company of Geneva. This machine is of the L head type, and has a bore of 3½-inches, stroke 4½-inches, and weighs 560 pounds. It will develop about 25 h. p. at 1,400 revolutions, and can turn up to 1,600, without being crowded

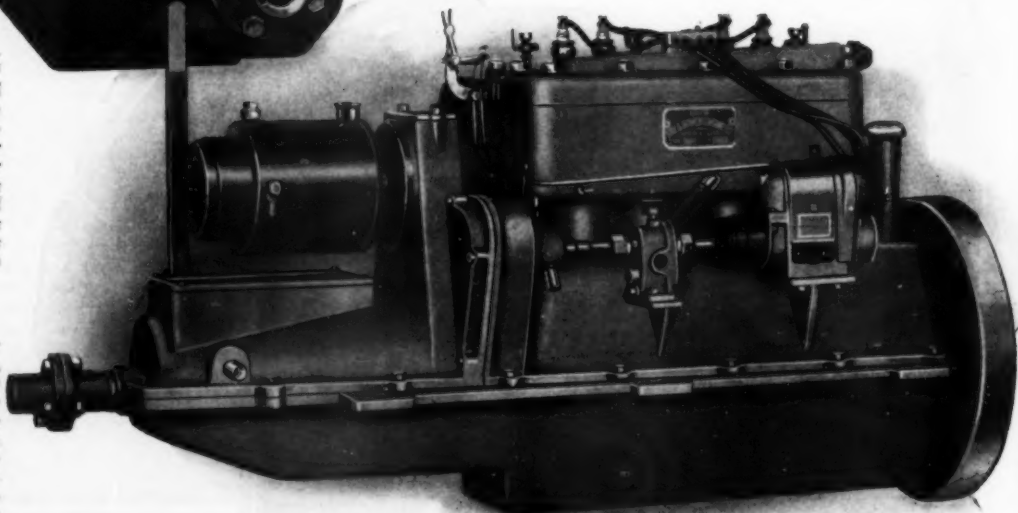


A Well Built Marine Engine

Unit Power Plant of Moderate Size Particularly Suitable for Runabouts Where Weight and Power are Important

The cylinder castings are enbloc of cast iron, and with absolutely uniform thicknesses of cylinder walls and water jackets. All valves are fully enclosed which eliminates noise and keeps the engine clean

Moving parts are of extra large size, and accurately ground. The crankcase is of the split type, with ample handhole plates which permit easy access to the entire interior of the machine when needed



COAST GUARD Fleet Progressing Fast

Rapid Progress Being Made By Many Builders On Construction of Boats and Engines for New Fleet to Curb Unlawful Importations

By A. W. PAYNE

WHEN your Uncle Samuel's Coast Guard—friend of all ye yachtsmen—starts out to do a thing, it jolly well, as our British cousins put it, does it. And so, its fleet of motor boat foes-of-the-*rum-runner* is by now almost already afloat. In fact the Coast Guard has kept things humming so it is a couple of jumps ahead of MoToR BOATING's attempt to record its progress. And as you read this, the C.G. will be several more jumps in the lead.

At the date of writing, a skipper-in-chief has been named to command the several hundred vessels that will attempt to stem the tide of smuggled rum, drugs and aliens; a couple dozen boats are being set up; engines for them are being built; outfitters are getting together equipment; the Philadelphia Navy Yard has laid plans for reconditioning several destroyers to be taken over for fast patrol work; final touches are being made on the last boat plans; and applications are being received at headquarters by the hundreds for places in the temporary force to man the fleet.

It dare be added, too, that undoubtedly wise *rum-runners* are preparing to hurry up what must be about their last illicit shipments to Halifax, Nassau, etc.

Commander Harry G. Hamlet, C. O. of the U.S.S. Marietta in European waters during the war, skipper of the cutter Mojave at Honolulu, and veteran of the Coast Guard, will be fleet commander. That Admiral F. C. Billard, commandant of the service, picked such an experienced and determined officer to head the new fleet and direct anti-*rum* running operations, is sufficient earnest of the grim intent of the coastal police to sweep the waters of these dispensers of poison, dope and Chinks.

The destroyers Ammen, Beale, Cassin, Downes, Joutt, Patterson and Paulding, of the Navy, have already been turned over for use of the Coast Guard, and reconditioning will start at once. A dozen more will be put in shape at League Island during the coming year, it having been estimated about that length of time will be necessary for the whole job.

The following firms had been awarded contracts for building boats of the 36-foot speed type, open harbor craft to be known as open picket boats:

Burger Boat Co., Manitowoc, Wis., 5 boats; Chance Marine Construction Co., Baltimore, 5 boats; Frederick S. Nock, East Greenwich, R. I., 5 boats; Greenport Basin and Construction Co., Greenport, N. Y., 5 boats; Gibbs Gas Engine Co., Jacksonville, Fla., 5 boats; U. S. Navy Yard, Portsmouth, N. H., 2 boats, and U. S. Navy Yard, Puget Sound, 3 boats.

These craft will be built by the firms on their own lines under general specifications drawn up by the Coast Guard. Some will be round bilge, some V section, as previously

described in MoToR BOATING. No doubt many other proposals will have been made and accepted and contracts awarded by the time this issue goes to press. Thirty of this type will thus be built, while seventy others, of approximately the same lines and dimensions, but with a small after cabin, with over-night accommodations for the crew, will be built. This class will be known as the cabin picket boats. They are for harbor, inlet and river patrolling in protected waters, while the larger type, to be known as patrol boats, will make extended patrol work outside, regardless of weather or time. The destroyers will act in deep water as mother ships and for speedy moving to unprotected points.

Among the bidders for these jobs were listed practically every boat building concern of note.

During the middle of May proposals for the larger motor

craft were opened, and one hundred seventy-five will be constructed under detailed specifications and plans drawn up on the board of the Coast Guard engineers. The best possible features to attain in motor craft are expected under the unusual requirements for this type, advice on which was given the Coast Guard officers by some of the best motor boat builders in the country at a recent conference. These boats will be 75 feet over all, twin engined, and with accommodations and sea going capacity for extended cruises.

As for engines, contracts were awarded the Sterling Engine Company and the Consolidated Shipbuilding Corporation, who are required to start deliveries two months from the date of awards. The former will supply 350 six cylinder motors of its well-known Viking type. Two of these 200 horsepower engines will be installed in the larger craft. They are 6¼-inch bore and 7¾-inch stroke, each to be installed as a separate unit with control panels, pumps, lubrication, electric starting, reverse gears, etc.

Consolidated will supply 150 MR-6 Speedways, six cylinder, 5¼ by 7 inches bore and stroke, delivering from 150 to 180 brake horsepower. Each engine to be a complete unit as with the Sterlings.

The government is to furnish much equipment, such as storage batteries, but other contracts are to be, and very likely already have been, awarded for other equipment. All equipment is to be standardized throughout the fleet, and the engines are to be built by only the two concerns, so that should a breakdown in some small part threaten to put a boat out of commission, new parts can be installed with the minimum loss of time. A number of spare engines, and sufficient spare parts to total a number of additional motors will be at shore stations and on mother ships to bear out this program. The contracts also bound the engine companies to furnish (Continued on page 72)

DATES OF IMPORTANT CHAMPIONSHIP RACES

July 3-6—Annual Regatta, Mississippi Valley Power Boat Association, Oshkosh, Wis. A. T. Griffith, Secretary, Peoria, Illinois.

July 3—Middletown, Conn. to Sachems Head, Conn. Classes for cruisers and express cruisers. Minn S. Cornell, Jr., Middletown, Conn.

July 3—New Orleans to Pensacola 200 mile cruiser race. Thomas Burns, Southern Y. C., New Orleans, La.

July 4—Sachems Head, Conn. around Falkners Island and return.

July 5—Sachems Head, Conn. to Lloyd's Harbor, Long Island. Classes for cruisers and express cruisers. M. S. Cornell, Jr., Middletown, Conn.

July 12—New Rochelle to Block Island, New York Athletic Club, open to cruisers. E. H. Tucker, Chairman, 110 William St., New York City.

July 31—Long Distance Ocean Championship for James Craig Trophy, Columbia Yacht Club, New York City to Shelter Island, Long Island. C. F. Chapman, Chairman, 119 W. 40 Street, New York.

July 31—Mamaroneck, N. Y. to Shelter Island, L. I. Cruiser race for MoToR Boating Trophy. Open to cruisers 25 feet to 70 feet. L. W. L. W. Roy Halsey, Chairman, Mamaroneck, N. Y.

August 2—Handicap Cruiser Championship of America, Shelter Island, N. Y. Open to cruisers 30 to 45 feet L. W. L. W. Bradford, Chairman, 154 Montague St., Brooklyn, N. Y.

August 8-15-22—National Trophy Race, Lake George, New York. Lake George Regatta Ass'n., R. E. Henry, Chairman, Hague, N. Y.

August 14-16—Annual Regatta of Buffalo Launch Club, Buffalo, N. Y. Arthur J. Utz, Chairman, 887 Niagara Street, Buffalo, N. Y.

August 29-Sept. 1—Annual Gold Cup Regatta, Detroit Yacht Club, Detroit, Michigan. W. D. Edensburn, Chairman, Hotel Addison, Detroit, Mich.

March 20-21, 1925—Annual Southern Regatta, Miami Beach, Fla. Championship Races for Hydroplanes and High Speed Runabouts. Carl G. Fisher, Chairman, Miami Beach, Florida.

PERIWINKL, A Wholesome Cruiser

A Neat Little Boat of the V-Bottom Type Which is Arranged Particularly for Easy Construction by The Amateur Builder

Designed Especially for Motor Boating

By WILLIAM ATKIN

WE ALL have quite different ideas as to how a cruising boat should be built and I have learned long ago that what is a perfect design for one man is very much another thing for his neighbor. One wants speed, another cares nothing for it; one wants headroom, another looks upon it as useless; one likes to be out in the weather, another encloses the cockpit within a wind-tight cage; one seeks much freeboard, another likes a rakish looking craft with but little freeboard; one demands a lot of deck room, another sees little value in this feature; and so it goes.

As I see it a small cruising boat has to be many things in one. There is no way in which to perfectly combine the elements everyone desires into a single boat. It is therefore necessary to compromise, which means the sacrifice of some elements for the betterment of others. Herein lies the charm of designing small craft of any kind.

In laying out the design for Periwinkl I pictured the kind of small motor cruiser which I should build for my own use and have tried to incorporate in the craft the features which I have found to be essential and practical in a boat of this size and type. I have not tried to crowd the accommodations of a 30-footer into her 23 feet of length as I have found that it cannot be done. The cost

of construction and fitting out has been well considered and all unnecessary equipment eliminated, and this for the reason that simplicity in anything is the keynote of its value.

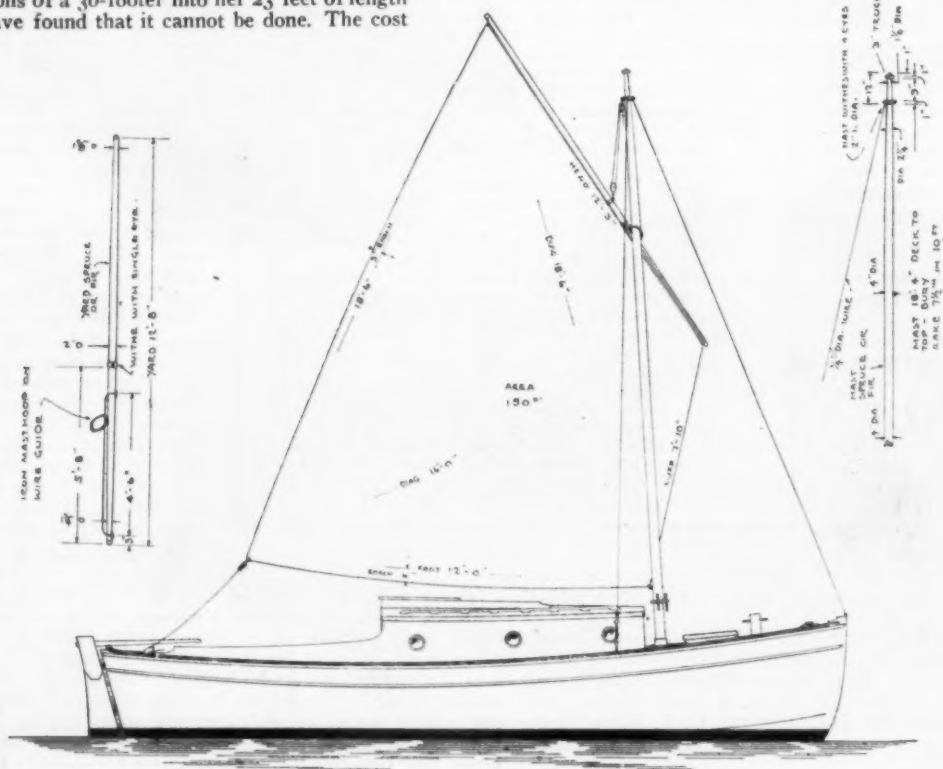
In over all length she measures 23 feet 6 inches; on the water line her length is 22 feet; her beam on deck is 8 feet; on the waterline 6 feet 11 inches; and the draft is 1 foot 11 inches. The freeboard is ample to form a reasonably dry craft under the varied conditions of weather encountered during the months of the year through which most of us are wont to go boating. I know she will be an excellent little vessel in rough water as one of my clients has had a boat similar to her built and his boat is as able as any small boat can be.

Periwinkl will be buoyant and fast, considering her moderate power, she should do at least 9 miles an hour with a motor like the Baby Doll Red Wing, the Go-best, Universal, or Niagara installed. With a single cylinder 5 to 6 h.p. two cycle the speed should be between 6½ and 7 miles an hour.

The center of gravity of the weights is somewhat abaft amidships for the purpose of keeping the bow light. All small craft travel drier and more comfortably if trimmed in this manner as demonstrated by the famous Seabright

TWO DESIGNS A MONTH

As announced in May MoToR Boating, William Atkin is going to design two brand new boats each month for you. The first of these are for a clever little cruiser intended for moderate power and a little 8-foot dinghy. These designs will be, one a cruiser, runabout, auxiliary, or other serviceable craft, while the other will be a small boat of the dinghy class and designed for sail or outboard engine propulsion. Mr. Atkin has long specialized in the preparation of designs for boats and yachts of all sizes and there is perhaps no other designer who has had his broad experience and practical training. By choice he prefers to work out small boat designs and those which he will prepare for you during the year will be among his best.—Editor.



Outboard profile, sail plan and spar details for the 23½-foot cruiser Periwinkl designed by William Atkin

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MoToR BoATING's BUILD

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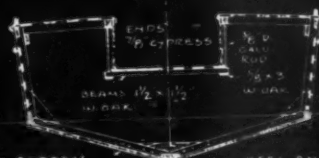
JUN

24



PROPELLER SHAFT 1" IN DIA. LIGHT
PATTERN STUFFING BOX - CORE
SHAFT HOLE 1 1/4" DIA. FILL AFTER
SHAFT IS TIGHTENED UP WITH MELTED
WAX.

COCKPIT WELL IS SUSPENDED
FROM DECK WITH 3/8" RODS
EACH SIDE -



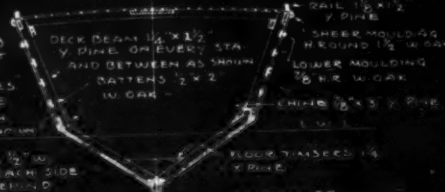
PLANKING ON BUTT JOINT
AND DIAGONALLY FROM
CENTER LINE 7/8" X 6" W OAK -
SCREW FASTEN

WHEEL AND DEAD-
WOOD SIDED 2 1/2"

SECTION AT
STA 5 LOOK-
ING FORD -

PLANKING ON TOP SIDES 1/2" W OAK -
FIVE STEPS EACH SIDE
2" X 2" OAK BATTENS BEHIND
SEAMS - SCREW FASTEN

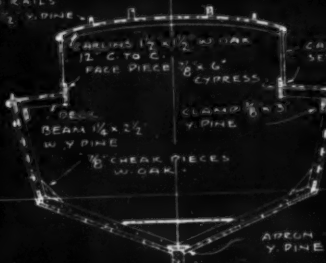
DECK 3' X 5' T & G SPRUCE OR W PINE
COVERED WITH 30# DUCK Laid IN MACHINE GUN



EDGE TRIMMED 1/4"
Y PINE

SECTION AT
STA 3 LOOK-
ING FORD -

HAND RAILS
1 1/2" X 1 1/2" Y PINE



CHAIN SIDES 7/8" CYPRESS
SET IN GUN

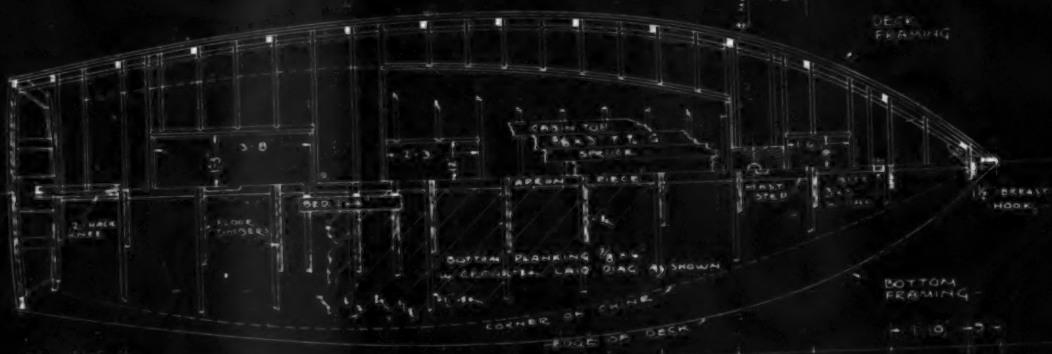
UPPER
1 1/2" X 1 1/2" Y PINE

APRON PIECE 1 1/2" X 6" Y PINE -

STERN FRAMING
ART. -

STERN LOOKING
FORD -

SECTION AT STA 6
LOOKING FORD -



DECK FRAMING

BREAST
HOOK

BOTTOM
FRAMING

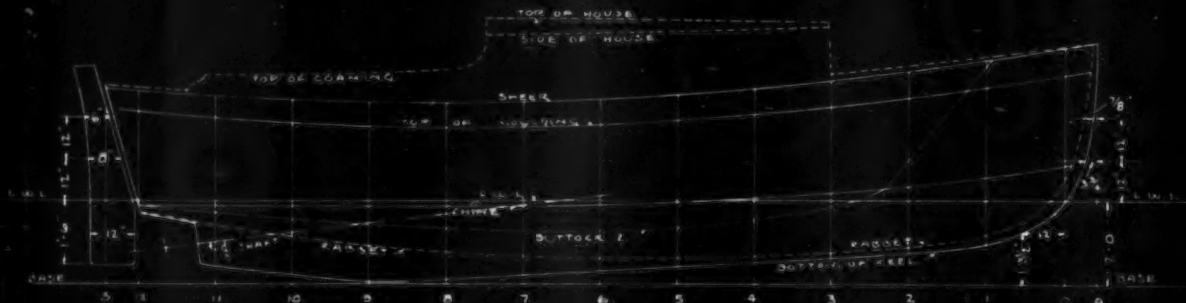
CORNER OF CHINE

EDGE OF DECK

5 12 11 10 9 8 7 6 5 4 3 2 1 0 A

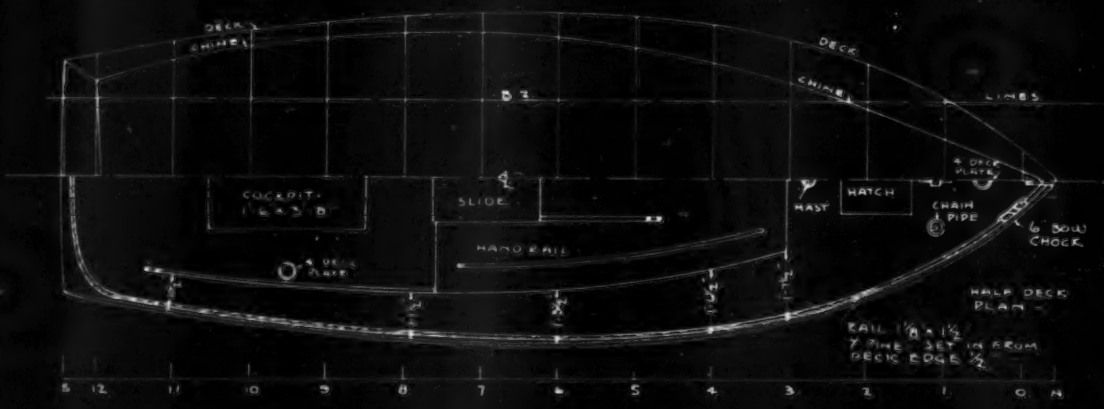
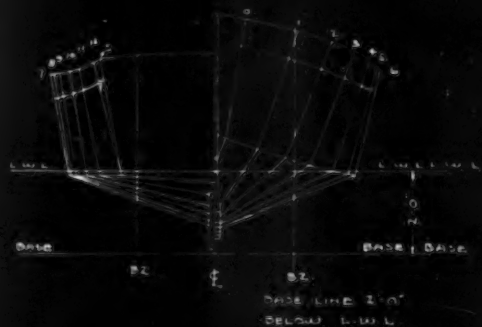
A BOAT Series

Scale $\frac{1}{4}" = 1'$



DIMENSIONS -

L O A	23'-6"
L W L	21'-0"
BREADTH O A	8'-0"
BREADTH W L	6'-11"
FREE BOARD BOW	3'-3"
LEAST	2'-4"
STERN	2'-8 1/2"
DRAFT	1'-11"
DISPLACEMENT	4640*
STATIONS SPACED	1'-10"
LINES DRAWN TO OUTSIDE	
OF PLANKING - PLANKING ON	
SIDES 1/2" 4 ON BOTTOM 7/8"	
KEEL AND STEM SIDED 2 3/4" +	



PERIWINKL

23'-6" X 22' X 8'-0" X 1'-11"

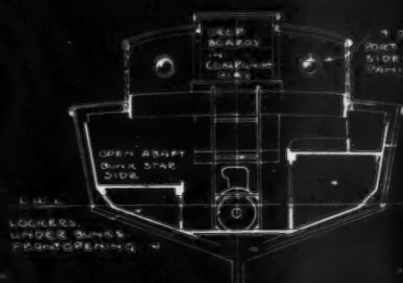
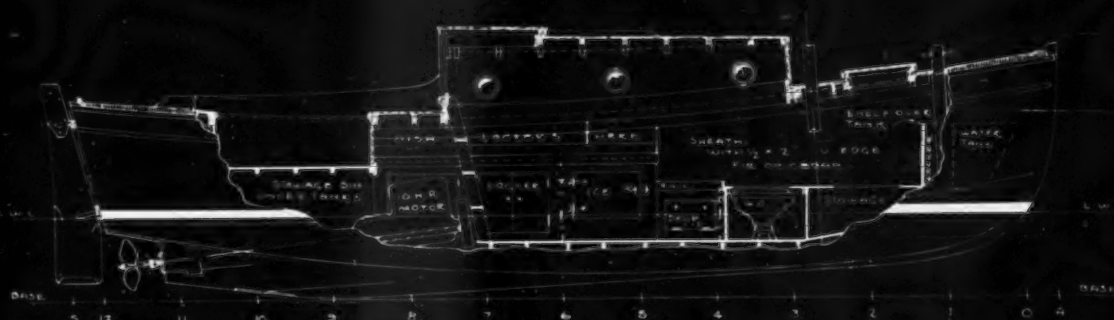
V. BOTTOM CRUISER



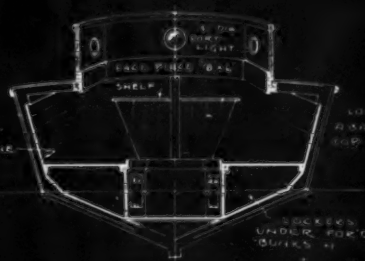
Designed Especially for

by WILLIAM ATKIN

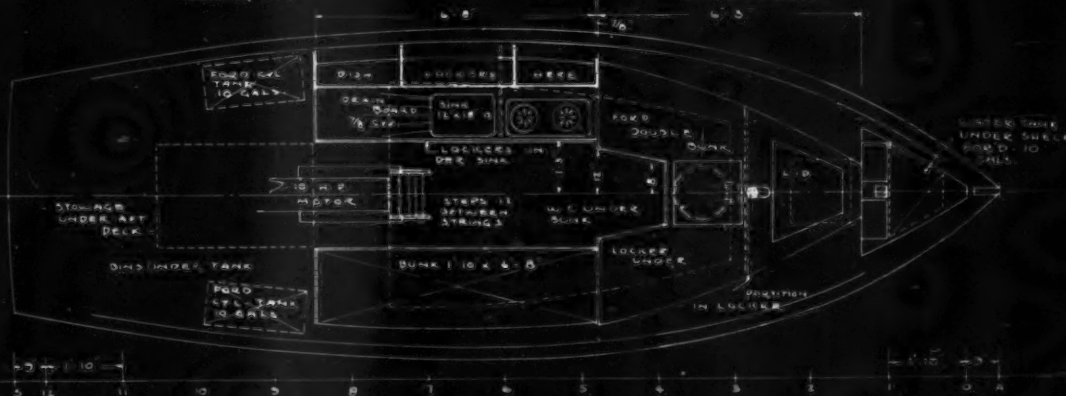
119 West 40th Street
New York



SECTION AT
STATION 7
LOOKING AFT



SECTION BETWEEN
STATIONS 4 & 5
LOOKING FORD



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fishing skiffs, and also the Hampton boats used by the lobstermen Down East. In a bad sea the weak point of most boats is the large cockpit. If full speed is maintained a lot of water comes aboard, but so long as it cannot tarry here or there or some other place in the boat all is well. This is one of the reasons for the cockpit well arranged after the practice of a sailing boat. I feel this cockpit a most desirable feature. There is little use in making it larger because after all Periwinkl is designed for the accommodation of three as crew. There is plenty of comfortable seating room for four or five persons and this is enough of a live load for a boat of this size. If there is one thing I dislike to see it is any kind of boat, big or little, crowded to the gunwales with a care-free mob, skylarking and cutting up like the mischief, all unconscious of the wetness of the water below them, and the waiting arms of Davy Jones.

Please don't change the size or arrangement of the cockpit; it is just right as it is! Periwinkl is too small for a host of passengers, if you must carry more than five all told please consider a larger boat. Since I have brought up the subject of the carrying capacity of small cruising boats perhaps I should again go on record against the prevalent idea that the first consideration in a boat should be accommodation and room. As I see it, after 20 years' experience with small boats, the first consideration must be seaworthiness; next to this must be sound construction; then reasonable speed coupled with motive reliability; followed by appearance; and with accommodation, the last consideration. As I have said before it is a great mistake to build a cruising boat for the sake of headroom alone. And there is no way to sleep eight persons in space that will comfortably accommodate only four. It is a mistake to design a boat for the sake of foot room; or for the sake of trying to crowd the accommodations of a 40-footer into the modest dimensions of a 20-footer. By this I do not mean we should build boats that are cramped and uncomfortable; rather I mean we should avoid the tendency that is making miniature modern hotels of our cruising craft. After all, boats are boats, and the less trick stuff we pile into them the better off the sport will be, and the more happy and free will be the all too short week-end cruises; the kind most of us enjoy.

Deck room on a cruising boat is quite as important as room inside, but neither one or the other of these features should be over or under done. In Periwinkl the idea is to balance these so as to have the advantage of both. The trunk cabin permits ample room for working anchors, landing at a float or dock, and permits easy boarding from a dinghy along side. These are items which must be considered. Also the open port lights in the for'd and aft' ends of the house make possible perfect ventilation, while those

piercing the sides give light.

There isn't any doubt but that an old fashioned tiller is about as simple and serviceable an arrangement as any for steering and especially so in this little cruiser. The arrangement of the cockpit is ideal for a tiller as one can recline on the side deck inside the coaming (cushions under, of course) and steer with a foot, an arm, or by pressing the body against the tiller, all of which puts a lot of novelty into steering. While I have not shown them on the plans, tiller lines might be rove all around the outside of the coaming and the house; thus rigged the little packet can be handled from the forward deck or any other location. The tiller lines should have considerable slack so as to be easily grasped. Folks who think a fancy steering wheel necessary will be surprised how handy a tiller is and with what facility the boat can be handled.

The design of our little V-bottom cruiser is simplicity itself. The straight sections which I have always used in my small boats are not only easier to plank but are stronger, lighter, and require less material than the sections usually employed in V-bottom construction. Another thing, straight sections seem more in harmony with boats of the V-bottom type. I can easily forgive the appearance of the straight sections for the sake of the labor saved in building them. The keel is straight along its bottom to a point about 4 feet forward of the propeller post; here it sweeps up to within 5 inches of the center of the propeller shaft. Several things are accomplished by this. There is enough drag and length to the keel to assure easy steering in troubled water and the cut up facilitates both turning and handling. It will be seen that the shoe under the propeller is dispensed with and yet the propeller is protected in case of grounding. A better stream of water reaches the propeller and places the maximum draft three-fourths the length of the water line abaft the stem, which is advantageous. Another thing worth considering in this form of keel and deadwood is that the lumber used can be somewhat shorter, which is both stronger and cheaper.

The construction is not unusual and is about as simple as it is possible to employ. The keel and deadwood should be made of yellow pine sided $2\frac{3}{4}$ inches and dimensioned otherwise as shown on the plans. I think you will find it easy to read the dimensions and directions lettered on the plans. For this reason detailed printed specifications are hardly necessary. The siding, which means thickness, is given as $2\frac{3}{4}$ inches because 3-inch stock lumber as found in local yards will finish this thickness after it is dressed. White oak can be used for the back bone as well as yellow pine but there is little advantage to be gained by using it. Spruce also can be used for the same purpose as it is a first class boat building wood. However, it must be protected on the bottom with a (Continued on page 122)

DIMENSIONS TO
OUTSIDE OF PLANKING

TABLE OF OFFSETS

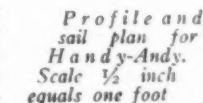
STATION	A	0	1	2	3	4	5	6	7	8	9	10	11	12	S
- HEIGHTS -															
L.W.L. TO SHEER	3-9	3-8	3-4 $\frac{3}{8}$	3-1 $\frac{1}{4}$	2-10 $\frac{3}{8}$	2-8	2-6 $\frac{1}{4}$	2-5	2-4 $\frac{1}{4}$	2-4	2-4 $\frac{1}{8}$	2-5	2-6	2-7 $\frac{1}{2}$	2-8 $\frac{1}{2}$
L.W.L. TO LOWER MOULDING		3-0	2-8 $\frac{1}{2}$	2-5 $\frac{3}{8}$	2-2 $\frac{7}{8}$	2-0 $\frac{1}{2}$	1-10 $\frac{3}{8}$	1-9 $\frac{1}{2}$	1-9	1-9	1-9 $\frac{1}{4}$	1-10 $\frac{1}{2}$	1-3 $\frac{3}{4}$	2-1 $\frac{3}{4}$	
SHEER TO DECK CROWN			0-0 $\frac{7}{8}$	0-1 $\frac{1}{2}$	0-2								0-1	0-1	0-1
SHEER TO TOP OF CABIN					1-5	STRAIGHT LINE TO				2-0					
SHEER TO SIDE OF CABIN					1-4	1-5 $\frac{1}{4}$	1-6 $\frac{1}{2}$	1-7 $\frac{1}{4}$	1-7 $\frac{3}{4}$	0-9 $\frac{1}{2}$	0-8 $\frac{1}{2}$	0-7 $\frac{1}{2}$	0-6		
BASE TO CHINE		2-9 $\frac{3}{4}$	2-1 $\frac{1}{2}$	2-3 $\frac{3}{8}$	2-1 $\frac{7}{8}$	2-0 $\frac{1}{2}$	1-11 $\frac{1}{2}$	1-11	1-10 $\frac{1}{2}$	1-10 $\frac{1}{2}$	1-10 $\frac{1}{2}$	1-10 $\frac{1}{2}$	1-10 $\frac{1}{2}$	1-10 $\frac{1}{2}$	
BASE TO RABOET			1-1 $\frac{7}{8}$	0-10 $\frac{1}{2}$	0-9	0-7 $\frac{7}{8}$	0-7 $\frac{1}{2}$	0-7 $\frac{1}{2}$	0-8	0-9 $\frac{1}{4}$	0-11	1-1 $\frac{1}{2}$	1-4 $\frac{3}{8}$	1-9	
BASE TO KEEL		2-0	0-11 $\frac{1}{2}$	0-8 $\frac{1}{2}$	0-7 $\frac{1}{2}$	0-6	0-4 $\frac{3}{4}$	0-3 $\frac{1}{2}$	0-2 $\frac{3}{8}$	0-1	0-1	0-3	0-6 $\frac{1}{4}$	1-9	
BASE TO ∇ PROPEL. SHAFT								2-1 $\frac{1}{2}$						0-9 $\frac{1}{2}$	
HALF BREADTHS															
DECK	0-0 $\frac{7}{8}$	0-9	1-11 $\frac{1}{2}$	2-9 $\frac{1}{2}$	3-4	3-8 $\frac{1}{4}$	3-10 $\frac{3}{8}$	3-11 $\frac{1}{4}$	3-11 $\frac{1}{4}$	3-10 $\frac{1}{2}$	3-8 $\frac{1}{2}$	3-6	3-2 $\frac{3}{4}$	2-10 $\frac{3}{8}$	2-9
CHINE		0-2 $\frac{3}{8}$	1-0	1-8 $\frac{1}{2}$	2-3 $\frac{1}{2}$	2-9 $\frac{3}{8}$	3-1 $\frac{1}{2}$	3-4	3-5 $\frac{1}{4}$	3-5 $\frac{1}{8}$	3-3 $\frac{3}{8}$	3-1	2-8 $\frac{3}{4}$	2-3	

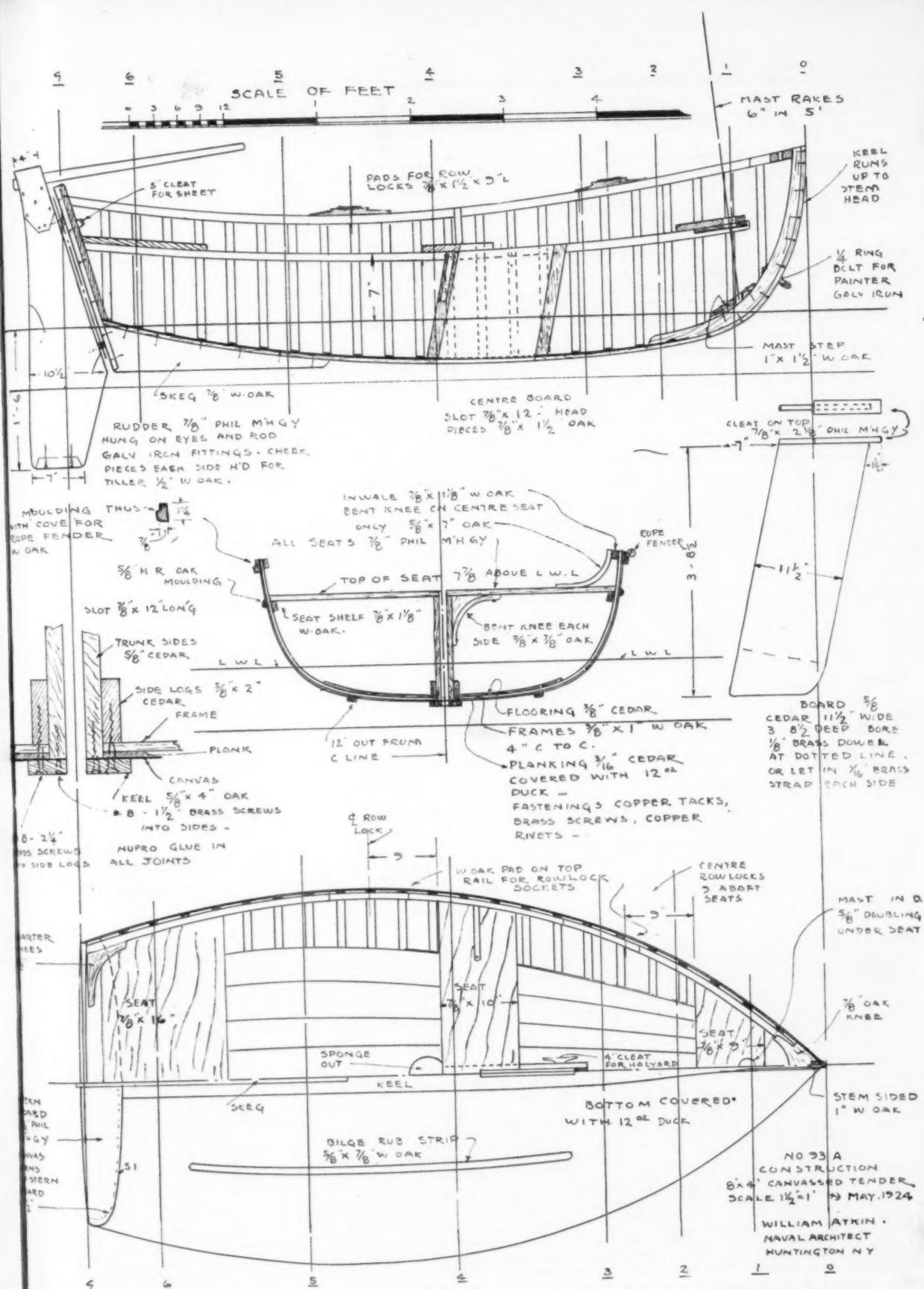
Complete table of offsets for the V-bottom cruiser Periwinkl

Designed for MoToR BoatinG by William Atkin

The forms should be made of rough boards, spruce or Washington pine will be about as cheap as anything for this purpose. Seven-eighths thick is enough and if the width is around 6 inches very little will cut to waste. The side members of the forms should be cut with 4 inches in length to spare so as to extend above the shear. This will come in handy

The stem is sided 1 inch, and should be made of white oak. It is not rabbeted after the usual fashion and really should be called a stemson as the planks are fastened to each side allowing the end wood to show. The stern is a $\frac{5}{8}$ inch board, if possible in a single width, and can be made of mahogany or





Complete construction details for the 8-foot sailing dinghy Handy-Andy. Scale 3/4 inch equals one foot

The planking and frames are fastened together with $\frac{7}{8}$ inch copper tacks. These are simply driven in and clinched on the frames. There should be three fastenings to each plank.

The hull is now ready to smooth off. This will have to be done with a rasp and coarse file. The forms must be removed first, however, and the inwales fitted with the two knees aft, and the breast hook, otherwise the craft will not retain its shape. It is not necessary to sandpaper the surface, in fact the canvas will stick better if the surface is fuzzy. The canvas covering should be of 10 or 12 ounce weight and in a single piece. Before applying this the hull should be painted with a generous coat of liquid marine glue. This does not harden quickly; in fact remains soft for a day or so. The canvas will require some stretching and pulling before all the pleats brush out smooth, and so do not despair of finishing it in this way. The glue will help immensely in applying the canvas and is a far better thing to use than any kind of paint. The edge of the canvas around the deck and at the stern must be fastened with $\frac{3}{8}$ inch copper tacks.

The false keel can now be fitted. This extends in a single length from the stern to the head of the stem. It is shaped as shown, $\frac{5}{8}$ inches thick and 4 inches wide. The forward end will need steaming so as to bend easily around the bow. This can be managed with the makeshift steaming apparatus mentioned before. I should lay the keel in a thick coat of marine glue and fasten from the inside with round head screws; two in each frame. The fitting of the $\frac{7}{8}$ inch oak skeg will finish this stage of the work.

A detail drawing on the construction plan shows the way to fit the centerboard. This will be easy enough after the experience gained by building the boat thus far. The trunk is simply a narrow box with two head pieces of $\frac{7}{8}$ by $1\frac{1}{2}$ inch oak and $\frac{5}{8}$ inch cedar sides. The slot

through the bottom should be made before the trunk is screwed fast, and the slot, by the way, must be $\frac{7}{8}$ inches wide. The center board is of the dagger type $\frac{5}{8}$ inches thick and $11\frac{1}{2}$ inches wide with a total length of 3 feet $8\frac{1}{2}$ inches. Note the cleat across the top to prevent it from dropping through the slot.

The rudder is part of the lateral plane and should be deep and narrow as shown on the plans. The best way to hang this, is on eyes, two on the stern and two on the rudder with a rod dropped through to keep them together. The blade should be faired off fore and aft below the bottom of the stern.

With the fitting of the seats, tiller, flooring boards, and hardware the hull will be complete with the exception of the painting. The canvas should have at least three coats of paint and one coat of varnish; but in applying these allow plenty of time for each coat to thoroughly dry.

The rig is not a difficult thing to make with spars of spruce or fir as shown. The sail must be made by a professional otherwise it will not be satisfactory.

It may not be amiss to mention that some time ago I had some dinks like this one built. The cost of all the materials for one boat with the exception of the sail

amounted to \$42.40, and the sail can be made for \$16.00. The cost of having Andy built including labor should not be over \$165.00. This would be for the boat as shown and would include sail and spars, hardware, oars, and painter.

The plans from which the illustrations herewith were made are drawn to a scale of $1\frac{1}{2}$ inch to the foot and easily read. Believing that many who will build Handy-Andy may wish to secure blue

prints of the originals, arrangements have been made with F. W. Horenburger, 4263, Byron Avenue, Bronx, N. Y., to supply these at a nominal price. Any help or advice which may be needed in the construction of this boat will be gladly supplied by addressing the Editor of MoToR BOATING.

TABLE OF OFFSETS

STATION	0	1	2	3	4	5	6	8
HEIGHTS								
L.W.L. TO SHEER	1-7	1-5 $\frac{1}{4}$	1-3 $\frac{1}{2}$	1-2	0-11 $\frac{3}{4}$	0-11 $\frac{3}{4}$	1-1 $\frac{3}{4}$	1-2 $\frac{3}{4}$
BASE TO B 2				1-5 $\frac{3}{8}$	0-4 $\frac{3}{4}$	0-5	0-8	
" " " 1		2-0 $\frac{3}{4}$	0-8	0-4 $\frac{3}{4}$	0-3	0-4 $\frac{3}{8}$	0-8	
" " RABBIT		0-6 $\frac{3}{4}$	0-4	0-3 $\frac{1}{2}$	0-2 $\frac{3}{4}$	0-4 $\frac{3}{8}$	0-7 $\frac{3}{8}$	
" " KEEL		0-6 $\frac{1}{4}$	0-3 $\frac{1}{2}$	0-2 $\frac{1}{2}$	0-2	0-3 $\frac{1}{2}$	0-7	
" " SKEG						0-2	0-2	
HALF BREADTHS								
DECK		0-8 $\frac{1}{4}$	1-2 $\frac{1}{4}$	1-6 $\frac{3}{4}$	1-11 $\frac{3}{4}$	2-0	1-9	1-6 $\frac{1}{4}$
L.L. 2		0-6 $\frac{3}{4}$	1-0 $\frac{3}{4}$	1-5 $\frac{3}{8}$	1-11 $\frac{1}{8}$	2-0 $\frac{5}{8}$	1-9 $\frac{3}{8}$	1-6 $\frac{5}{8}$
L.L. 1		0-5 $\frac{1}{2}$	0-10 $\frac{1}{8}$	1-4	1-10 $\frac{1}{8}$	2-0	1-7 $\frac{1}{2}$	1-0 $\frac{3}{4}$
L.W.L.		0-1 $\frac{1}{4}$	0-7 $\frac{3}{4}$	1-0 $\frac{1}{8}$	1-7 $\frac{1}{8}$	1-9 $\frac{3}{4}$	0-8	
DIAGONALS								
D. 1		0-6 $\frac{3}{4}$	1-0 $\frac{1}{4}$	1-3 $\frac{1}{2}$	1-9 $\frac{5}{8}$	1-10 $\frac{1}{2}$	1-4 $\frac{3}{4}$	0-11 $\frac{1}{8}$
D. 2		0-7 $\frac{1}{8}$	1-1 $\frac{1}{2}$	1-6 $\frac{3}{8}$	2-0 $\frac{3}{8}$	2-2	1-10 $\frac{1}{4}$	1-6 $\frac{1}{4}$

DIMENSIONS TO OUTSIDE OF PLANK.

Table of offsets for the 8-foot dinghy Handy-Andy



The interest in fast boats is keeping up. Even the dog in this one expresses a keen delight in moving swiftly through the water

SMALL MOTOR BOATS

Their Care, Construction and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for the August Prize Contest

1. Describe and illustrate hanging pipe berths, for the cruiser and the method of securing mattresses to frames.
(Submitted by E. T. K. Wilmington, Del.)
2. Describe and illustrate the installation of an electric blower-fan for ventilating or cooling galley, engine-room, or other parts of a cruiser.
(Submitted by D. McC., Cleveland, Ohio.)

Successful Methods of Fuel Conservation

Ingenious Devices Suggested by Clever Readers to Help Reduce the Fuel Bill and Gain Increased Efficiency from the Boat's Power Plant

Answers to the Following Question Published in the April Issue:

"What method or device have you adopted to lessen the consumption of fuel or to utilize lower grades for your motor boat?"

To Improve Motor Efficiency

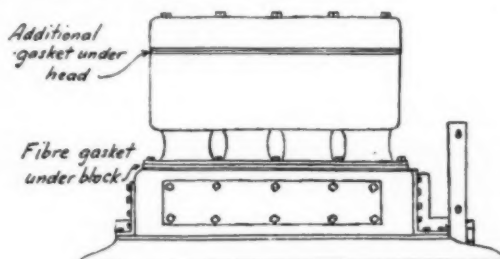
(The Prize-Winning Answer)

WE are assuming that the entire motor assembly is in good condition, alignment correct, and with oil, gasoline, cooling water and ignition systems functioning properly; yet the gasoline consumption is high for the power available.

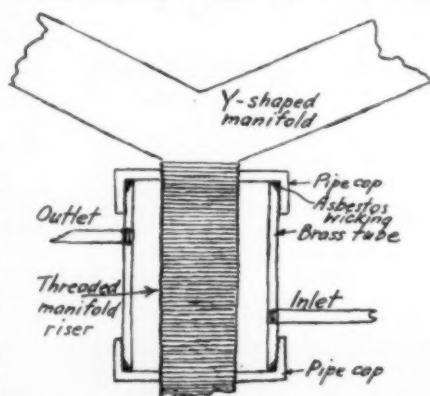
That is the average case, due to one or several of the following faults; namely, improper motor design, poor carburetion and lack of heat applied to the mixture leaving the carburetor, improper cooling, and poor ignition. We will discuss the why of these faults and how they may be remedied, and you can thereby check this against your power plant and eliminate those which you find.

Taking the motor design first, compression is one of the chief offenders in many of the older style motors. In those days we were getting high test gasoline, and in order to get a maximum of power for the piston displacement it was necessary to have it rather high, even in the lower speed classes. The owners of these engines today find it necessary to use over-rich mixtures or run under reduced throttle in order to keep these motors from pre-ignition knocking. Where the over-rich mixtures are used, carbon soon forms and the knocking is more pronounced. To get away from this fault it is necessary to either heat the incoming charge to a point where it is practically a dry gas, or to reduce the

compression to a point where the engine will not knock under full throttle. The sketch shown will illustrate how it is possible to fit a heavy gasket under either the cylinder block or head so as to increase the combustion chamber size to a point where it will approximate about 30% of the piston displacement. Of course, each motor will be a law to itself, and it may be found necessary to fit several gaskets until the one of the correct thickness is found, and some of the fittings such as piping and valve tappets may have to be lengthened correspondingly.



V. L. S. shows how to reduce the high compression of old engines which are inclined to heat



A hot-spot manifold heater suggested by V. L. S. which uses hot exhaust gas

The intake manifold should be Y shaped, first to eliminate sharp angles, also to allow condensed gasoline to drain back to the carburetor. On the column next to the carburetor, install a hot spot as shown in sketch to aid in heating the incoming mixture; and, install a gasket made up of asbestos and copper wire screen in between intake manifold and cylinder. This will allow only a combustible mixture to enter the cylinders.

In some cases the valve pockets are very rough inside, and have a tendency not only to retard the mixture, but will collect and condense considerable gasoline from the mixture. By the use of a small cold or cape chisel, it is possible to smooth up this roughness, then it can be finished with a small round file. The valve sizes should be checked up with some similar motor of the same horsepower, but of recent design, and where the valves are found to be small, have the seats reamed to the size desired and oversize valves made. The increased efficiency from this factor

Rules for the Prize Contest

ANSWERS to the above questions for the August issue, addressed to the editor of *MoToR Boating*, 119 West 40th St., New York, must be (a) in our hands on or before June 25, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the sender's names and addresses.

The names will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before June 15th. The editor reserves the right to make such changes and suggestions in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions above, any article or articles sold by any advertiser advertising in the current issue of *MoToR Boating* of which the advertised price does not exceed \$25, or a credit of \$25 on any article which

sells for more than that amount. There are two prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer both.

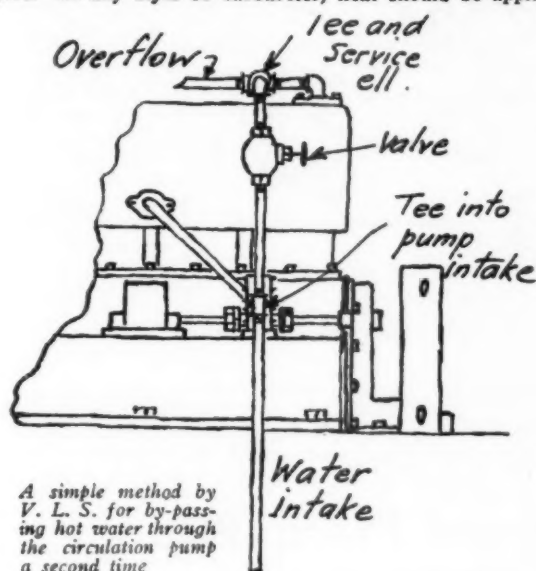
For answers we print that do not win a prize we pay space value.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of *MoToR Boating* of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

in the majority of cases will be found very noticeable.

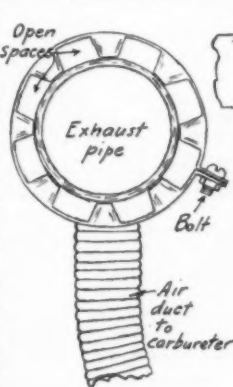
Present day carbureters are designed to handle the heavy fuels of today, while those of older manufacture were designed to handle the more volatile fuels, and consequently are not efficient. This replacement will pay for itself in a very short while, not only from fuel saving, but from wear and tear on the motor itself through oil dilution. This is especially applicable to motors where the lubricating oil is used over and over, until its lubricating qualities are gone. In any style of carburetor, heat should be applied



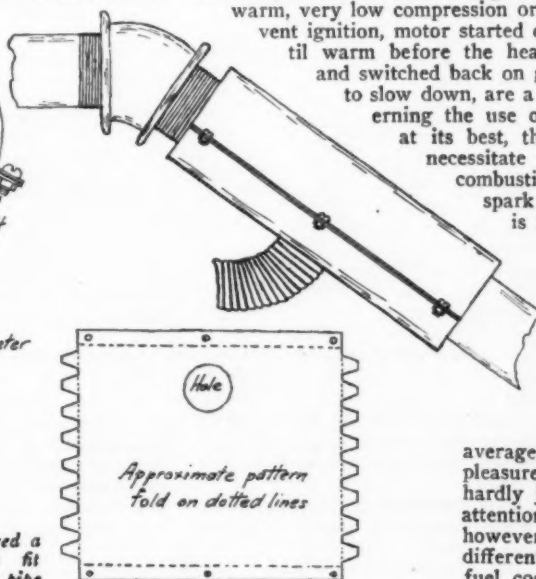
A simple method by V. L. S. for by-passing hot water through the circulation pump a second time

to the incoming air, taking it from a hot stove on the exhaust pipe, as illustrated, or by taking it from the base. Proper carburetor setting should be done frequently if fuel economy is important, as the demands of the motor will change with every change in the weather. On warm days when the atmosphere is damp, it will be found possible to run with a very lean mixture, while on cool days when the atmosphere is dry, a much richer mixture will be necessary. Also when the motor is started and still cold, a rich mixture will be required; but, within a few minutes the motor will become gradually heated until its operating temperature will be reached, then by changing back to a lean mixture, further fuel economy will be effected.

Much of the automobile motor efficiency is due to the high operating temperature, and the same is applicable to marine engines. This fault existing in fully 90% of the marine engines, is due to the manufacturers using an oversize water pump, sufficiently large to take care of the cooling under abnormal conditions. As the average motor is operating under normal conditions, it will be found to be running far too cool; as, the water leaving the jackets should average between 160 and 180 degrees. If the water jackets are properly proportioned and clear of obstructions, no harm will result from operating at these temperatures, and leaner carburetor mixtures can be used. For proper



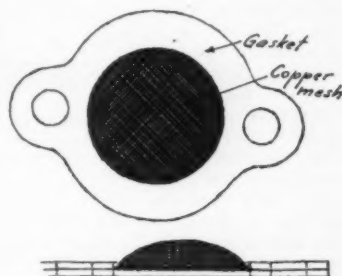
V. L. S. has arranged a hot air stove to fit around the exhaust pipe



water circulation, the water inlet should be at some low part of the jacket (preferably near the exhaust), and the overflow should come out of the highest portion of the cylinder head jacket. The sketch for piping a hot water return system through the pump, shows a system using only one valve, and will be found to be easily adjustable to the motor's needs, as well as requiring a minimum of piping.

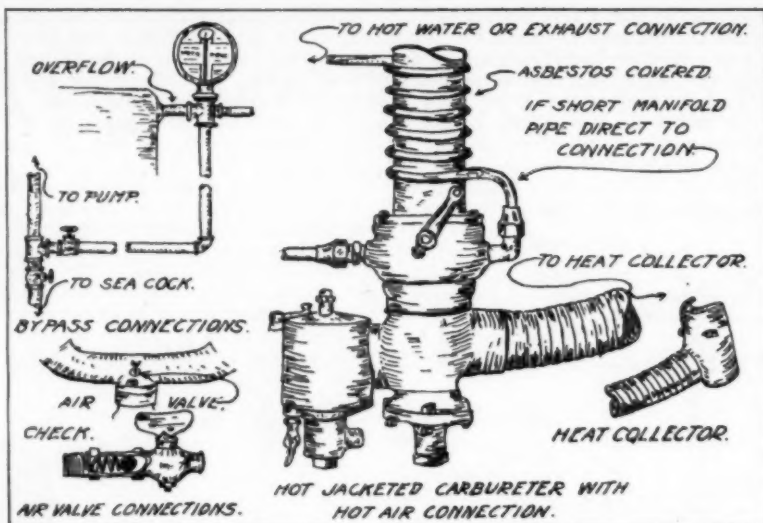
Where lean mixtures are to be used, ignition is a major factor; and many of our foremost manufacturers are using double and triple ignition systems, as it has been found possible to use even a leaner mixture through their aid. This is particularly true in the cases of high speed motors, or where reduced throttle conditions are to be expected. A hot spark at two or more places in the combustion chamber gives a more instantaneous explosion, allows the use of more air to the mixture, and burns the charge more completely; all of which allows the motor to deliver its maximum power at the best crank angle (as spark advance is somewhat lessened), and reduces carbon deposits very materially. This is especially true in either the T or L head motors, on account of the excessive combustion chamber width. Spark plug location should be carefully considered in order to get the best results from the dual ignition systems in the various types of motors. The use of a good high tension distributor system, wired through a storage battery, and a good high tension magneto equipped with an impulse coupling, makes a very satisfactory job. Both systems should be set so the sparks will occur at the same instant, and both should be connected with the advance lever in such a manner that the degree of advance will be the same.

The use of heavier fuels than gasoline, in the average gasoline motor, calls for considerable attention from the operator while on a run, and requires changes or replacements in either the motor design or in the equipment. The fuel must be heated, the air heated, the entire intake manifold jacketed to keep the mixture warm until it reaches the cylinders, two carburetors or one with two bowls must be used, an extra tank for gasoline to run motor until warm, very low compression or water injection to prevent ignition, motor started on gasoline and run until warm before the heavier fuel can be used, and switched back on gasoline when necessary to slow down, are a few of the factors governing the use of heavier fuels. Even at its best, the carbon deposits will necessitate frequent cleaning of combustion chambers, valves and spark plugs; also, oil dilution is so pronounced as to require sometimes as high as twice the amount of lubricating oil. Even then, more wear will be apparent, thereby lessening the life of the motor and increasing repair costs. The average man uses his craft for pleasure, and the savings would hardly justify the changes and attention required. Work boats, however come under an entirely different classification, as their fuel costs cover most of their



The copper mesh vaporizing device proposed by V. L. S.

operating expenses; in which case their best course would be to trade the old gasoline motor in for a motor designed primarily to operate on heavier fuels, rather than spending money and time fooling with an installation which is nothing more or less than an untried experiment. There are stock accessories on the market which are guaranteed as to results; however, their successful operation depends almost entirely on the fundamental design of the motor; and before making a change of this nature, it would be best to take the matter up with the motor manufacturers or some competent engineer. On the other hand, the man with the pleasure craft covers but small mileage, runs under reduced throttle for considerable periods, and spends much



W. B. M. believes in regulating water temperatures and auxiliary air intakes

time at anchor or at his mooring; therefore, with a good make of gasoline motor, kept in good repair and showing economical operating costs, it would seem foolish to make these necessary changes in the power plant and have it constantly necessary to devote his time to giving it the necessary attention for both operation and maintenance in order to use two different fuels.

V. L. S.
Wilmington, Del.

Fuel Economy With Low Grade Fuel

THE gasoline of today is carefully compounded by chemical engineers working in conjunction with the mechanical engineers, (Continued on page 68)

How to Steam and Bend Hard Wood

Difficult Operations of Steam Bending Which Can Be Successfully Carried Out By The Help Of Apparatus Suggested

Answers to the Following Question Published in the April Issue

"Give information and explain how to steam and bend oak for frames and other bent parts of the boat."

Simplified Steam Bending

(The Prize-Winning Answer)

FOR the successful bending of oak, as well as cedar and cypress planking, three things are necessary—suitable material, adequate steaming facilities and proper bending moulds. The more extensive the bending, the greater degree of perfection will be required of the above named necessities.

For a steam box that will be used for extensive steaming, say in the building of a medium size boat, the outfit illustrated in Fig. 1 is highly efficient and at the same time easy to construct. All that the builder will have to acquire will be the boards for the steam box, for the average boatman possesses a yacht stove, an empty five gallon can and a length of hose.

The material for the box may be of the roughest material. The hinged door at the end opposite the inlet hose is fitted loosely, so that it will not bind when it swells, as well as offering an outlet for any undue steam pressure that might arise.

The dimensions of the box will of course depend upon the width and the length of the lumber to be steamed, but inside dimensions of 10 feet long by 12 inches square will take care of anything that the amateur is likely to build.

In Fig. 2 is shown an expedient that can be hastily assembled for a small job of rib bending. It consists of a pipe,

such as is used for a roller under the skids when taking out or putting craft into the water. The lower end is plugged securely, the plug in the upper end simply tight enough to hold back the vapors. The rest of the sketch is self explanatory.

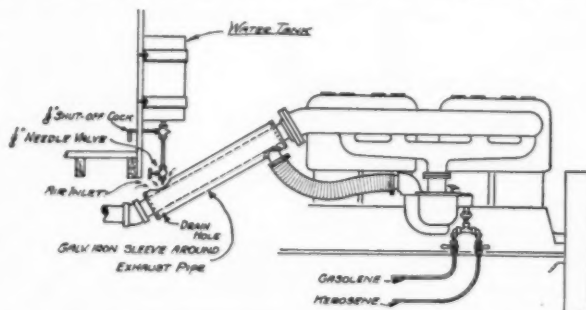
If access to a steam boiler can be had, the process shown in Fig. 3 is simple and efficient. A generous quantity of burlap is wound around the part of the planking that is to be bent and the nozzle of a steam hose tucked under the burlap. The writer has seen a small cruiser built with just this means of steaming. The steam boiler was situated over a hundred yards from the boathouse, but simply allowing the burlap to remain on the planking until it reached the boathouse solved

the problem of cooling off too quickly. The garboards were also steamed easily by this process.

For those who make the outfit described in Fig. 1, such a job of bending would be accomplished by placing the end to be bent into the steam box and plugging the door end with burlap. Ribs were readily bent by process Fig. 3 by winding burlap all around two ribs which came out very limber, due to the quality and the pressure of the steam.

While the curved coaming of a quarter of a century ago has passed more or less into the discard, the popularity of the pilot house is bringing back the form shown in Fig. 4, which in this case shows the upper and the lower frame of the house which the writer saw incorporated into a Connecticut fishing boat.

In the opening paragraph mention was made of the



Combined gasoline, kerosene and water drip device suggested by W. E. M.

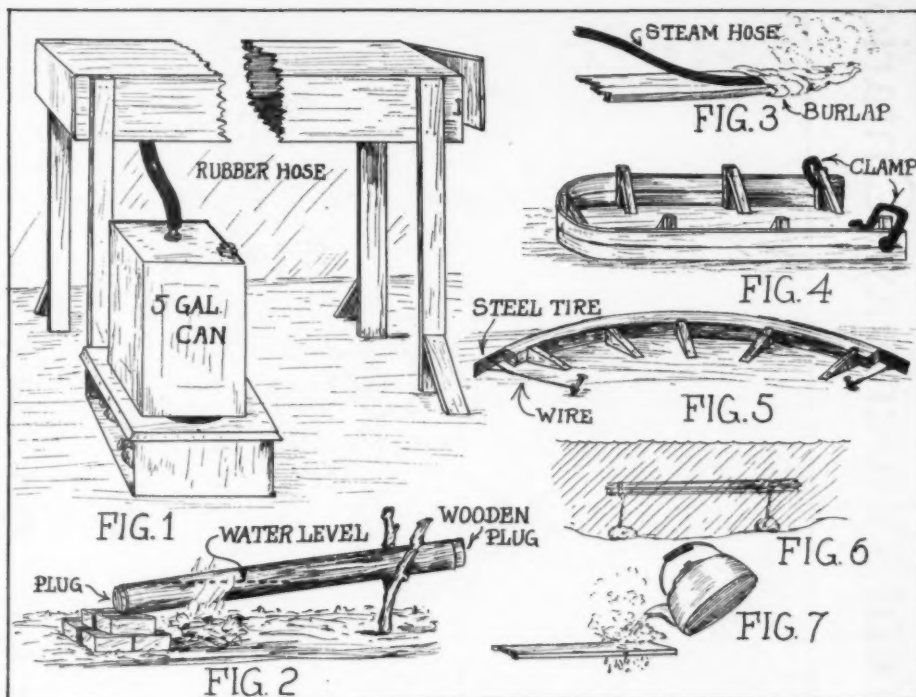
proper selection of material. Even with the more careful selection there will be ribs and carlins that will have a tendency toward cross grain. To prevent breaking and splintering the use of a backing consisting of steel tire stock is recommended. This is a practice that meets with much favor in shops where stock production is paramount with a resultant lowering of breakage and splintering.

This method is advisable with the so-called western oak which is more liable to breakage than the eastern variety or that oak of all oaks—Connecticut oak.

Fig. 7 will perhaps bring the reader back to the days when he built his first canvas canoe. Despite its crudeness, mother's teakettle has helped out in many similar cases.

For slight bends when none of the foregoing are available the process of soaking lumber in a river or pond aids to no small degree (Fig. 6). Instead of piling stones on the material on the bottom of the pond or the river, moor it as suggested. It will then come out free from mud or animal life that is apt to be in the water.

In general it may be stated that all bending should be done over a template, as shown in Fig. 4 and Fig. 5. Not



Simple ways of bending as suggested by J. E. M.

that the template must be identical with the designs shown, but it should conform to the ultimate form that it is expected the wood to take. As in the case with ribbands on a hull, all templates must be securely fastened. Where there is to be a bend and a twist, no amount of steaming will prevent cross grained lumber from splitting or breaking. Needless to state, the longer the lumber is allowed to stay in the mould or the template the less trouble will be experienced in fitting the part in its place.

J. E. M., NORWICH, CONN.

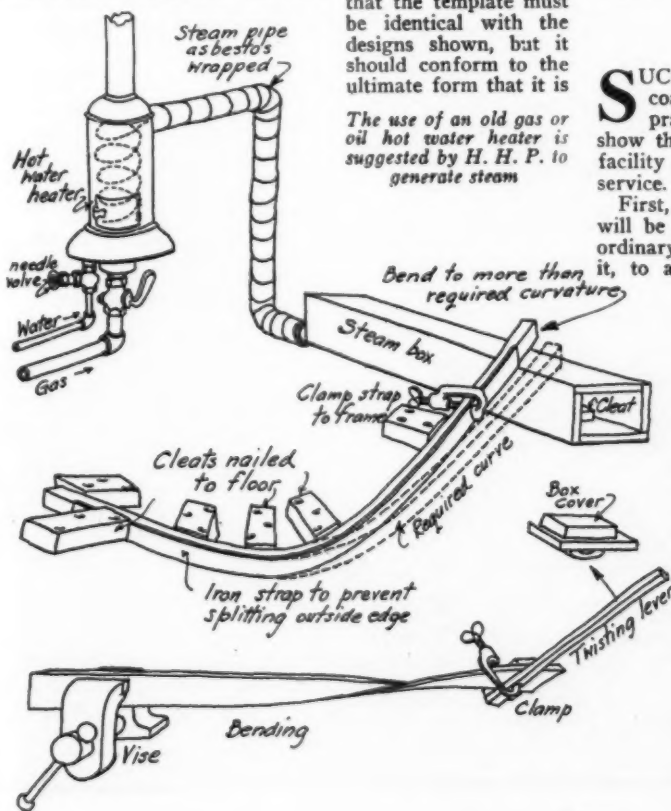
Steam-Bending Frames

SUCCESSFUL steam-bending of frames, small boat coamings, cabin sides, etc., requires considerable practice, but observation of professional practice will show that the operations can be quickly performed when facility is acquired. The following suggestions may be of service.

First, a steam generator of some sort, and a steam-box will be needed. The writer has used all kinds, from an ordinary tea-kettle or wash boiler with a wood fire under it, to a gas heated steam coil, with fairly satisfactory results all around. An old copper or cast iron coil hot water heater, gas or kerosene fired, is best and not difficult to obtain or set up. A small needle valve in the water supply line to the heater is a necessity, for but a small supply of water is required, this being turned into steam in the heater coil, and close regulation is needed. A one-eighth or one-quarter inch pipe size needle valve is large enough for small boat work. The steam pipe should be short and be led to the steam-box with as few elbows as possible; wrap it with a good thickness of old rags, burlap or asbestos to conserve the steam. Use no valve in the steam line.

Do not make the steam-box any longer nor with a larger cross-section than needed to hold the lumber to be steamed; usually half-a-dozen or so frames can be steamed at a time, depending upon the speed with which the builder works and the amount of help at hand. Any lumber may be used for the box; set cotton flannel or caulking cotton, in red or white lead, in the joints, or thick lead only. Make a close fitting cover for one end, made steam tight with burlap or flannel;

(Continued on Page 72)



WHERE TO CRUISE

The Trent Waterway in Ontario, Canada, One of Nature's Most Picturesque and Attractive Cruising Routes in the East

CONNECTING the waters of Lake Ontario and Lake Huron through Georgian Bay in Canada, there exists a newly completed waterway running through the Trent Valley from which it takes its name. This route offers for the cruiser one of the most attractive cruising grounds on the northern continent. The waters through which this route goes are teeming with countless numbers of fish of all kinds and they are awaiting the baited hook of the fisherman. These endless supplies of trout, small mouthed black bass, maskinonge, etc., are restocked each year from the government fish hatcheries. Along the entire route there are most excellent camping grounds where guides are available for trips of exploration into the forests and interior. At the terminus of the New York State Barge Canal system at Oswego, is a logical point from which to start off for a trip through this waterway. The distance directly across the lake to the entrance of the Murray canal to the Bay of Quinte, which leads to the city of Trenton is about 85 miles. Trenton is really the beginning of this waterway. Throughout its entire length there are numerous hotels, at which the visitor can secure first class accommodations at moderate rates.

Due to the mountainous country through which this waterway flows, the currents are controlled by many locks and lifts. There are no less than forty-six different locks along this canal, including two of the hydraulic type which have total lifts of 48½-feet in the one case, and 65-feet in the other. In addition there are at Swift Rapids and Big Chute, marine railways which limit the size of boats to 56-feet in length and 13-foot 5-inches beam for any who desire to go beyond Orillia. The canal is entirely free without lockage charges or fees. The service is excellent and there are no customs restrictions. The entire route is buoyed and the arrangement is such, that in going up-stream the red is kept on the right hand side, and the black or white on the left. Charts which detail the several sections of this route are available and can be obtained through the Trent Waterway Development Association at Peterborough, Canada. These charts are a set of twelve and in addition there is a guide book which covers many other features of the route. The industrial development in this section has been very rapid, and it is attributable directly to the constant supply of hydro-electric power which is available at low cost. Facilities for shipping to all markets are available, and the abundance of labor makes this region a fast growing one. Many branch factories have been established and in the city of Peterborough, with 25,000 inhabitants, there are forty-two different industries represented. The distance to Peterborough can be roughly stated to be about five days by water, and eighteen hours by rail from New York.

Throughout the entire 250 miles of this waterway there are only some thirty miles which can be considered as

canal. The balance is through connected lakes and rivers running through the most picturesque and delightful region. The capacity of the waterway from its entrance at Trenton to Lake Simcoe, is for boats up to 118-feet in length, and 33-foot beam. At the entrance there is a chain of six locks which takes the cruiser practically to the village of Frankford. From here the waters of Bradley Bay are used, and the next flight of ten locks comes at Campbellford. This city is located on Trent River and has excellent hotel accommodations. There is an interesting electric power plant where 30,000 h. p. is developed within six miles of this town. Continuing along the Trent River the village of Hastings is soon approached since it is only fifty miles beyond Trenton, and twenty-three miles further to Peterborough. Hastings is a popular summer resort where good fishing of all kinds can be had. Guides are available, as are excellent camping sights for those who wish to tarry here.

Beyond Hastings this waterway traverses Rice Lake, which is a large body of fresh water, the natural channels of which are ample for all vessels. Three channels give access to the Otonabee River from Rice Lake, and the center one being arranged for deeper navigation. The Otonabee River has been deepened from the lake to lock No. 19, the maximum draft at present being about 8-feet. It is contemplated to increase this to 9-feet at a future time. At the city of Peterborough the canal structures are very unique. There is at Peterborough a hydraulic lift lock which has chambers 139 by 33-feet in size. The weight of water in the chamber is 1140 tons, while the steel work to support this, is an additional 1400 tons. The

hydraulic rams which operate this, are 7-feet 6-inches in diameter. This lock is theoretically an automatic machine and takes the place of ordinary locks, where a great difference of level is found in a short distance. They may be considered to be two immense elevators with their hydraulic presses connected so that the descent of one causes the rise of the other.

From Lakefield to Balsam Lake the route is navigable for a depth of six feet and follows the Kawartha Lakes chain and the connecting rivers.

Between Balsam Lake and Lake Simcoe, there is another hydraulic lock at Kirkfield. The lift of this is not quite as high as the one at Peterborough, although the operation is in general similar. From this point to Lake Simcoe there are five locks in five miles which drop boats down to a lower level. There are also twelve bridges, eight of which are swing spans. Continuing on through the Severn River past the city of Orillia, which is one of the chief ports of the waterway, we are stopped by the lock at Swift Rapids. Here the work of construction is not yet entirely complete, and to overcome the lift a small marine railway can carry boats between the two levels.

Cruise No. 11 — Trent Valley Waterway

Trent Waterway Chart Series	Distance Between	Total Miles From Oswego	Total From Georgian Bay
Oswego on Lake Ontario New State Barge Canal Terminus			335
Trenton, Ontario.....	1	85	250
Frankford.....	2-3	7	243
Campbellford.....	4	24	219
Trent River.....	5-6	12	207
Hastings.....	7-8	8	199
Harwood.....	9	16	183
Bewdley Wallace Point.....	10	8	175
Peterborough.....	11	14	161
Lakefield.....	12	10	151
Young's Point.....	13	4	147
Burleigh Falls.....	14A	9	138
Hall's Bridge.....	14	7	131
To Bridgenorth 8 miles....			
Bobcaygeon.....	18	17	114
To Lindsay 8 miles.....			
Fenelon Falls.....	18	14	100
To Cobocok 7 miles.....			
Kirkfield.....	19	16	84
Gamebridge.....	19	11	73
Orillia.....		18	55
Washago.....		9	46
Midland.....		28	317
Penetang.....		10	327
Georgian Bay.....		8	335

Yard and Shop

Notes of Interest to Both Owner and Manufacturer

Smart Sloop Smarty

THE many popular designs which have appeared in MoToR BOATING have led to the building of numerous boats of all kinds. The most recent of these is the little 14-foot sloop Smarty designed by Charles D. Mower, which is now being built and stocked as a standardized product by the T. A. Kyle Company of City Island. They are making a high class job of this little boat, and are building it entirely of oak and mahogany, with Oregon fir spars and boom.

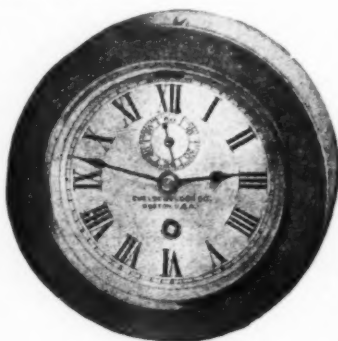


How John Edwin Hoag of Los Angeles, recently solved the problem of transporting an Evinrude boat and Evinrude outboard engine from his home to Balboa Bay

This boat should prove to be an excellent little craft for sailing, rowing, and fishing, and is so easily handled that the children can be trusted with it. Its price has been kept down to as low a point as is consistent with good workmanship, and for this reason it should make a fine little craft for class racing in yacht clubs. The finish being bright makes the mahogany planking stand out to the best advantage, and improves the appearance of the boat tremendously.



Osprey is a 36-foot launch operating in passenger service in Alberta, Canada, for William Mather. The boat is equipped with a model U Gray engine which has given excellent service



which gives the results of all sail and motor boat races during 1923, has just been issued, and is of great value to all yachtsmen interested in this sport. Copies of this can be obtained without charge by writing to the publishers, Edward Smith & Company, 127 West Avenue, Long Island City, N. Y.

One of the excellent time pieces which the E. J. Willis Company recently purchased from the Navy Department, and which they are selling at unheard of prices

(Continued on page 65)

Evinrude's New York Store

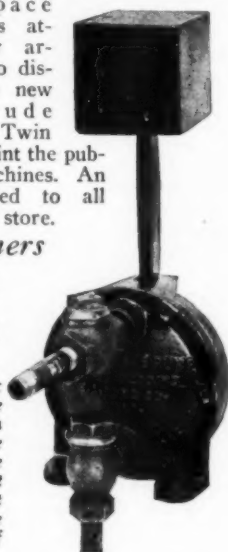
The demand for Evinrude outboard engines and boats has grown to such an extent that it was necessary for Oluf Mikkelsen, the New York Branch Manager, to seek larger quarters. He has located at 115 East 23 Street, and has there opened a large store where the products of this company can be displayed to the best advantage. The large show window space which is attractively arranged to display the new Evinrude Sport Twin

will do much to acquaint the public with these little machines. An invitation is extended to all yachtsmen to visit the store.

Book of Winners

The twentieth edition of the little booklet called Winners, published by Edward Smith & Company,

An automatic pump in three sizes which works with the motion of the boat. A slight roll is sufficient to keep the bilge free of water



Glorietta a 50-footer owned by the Sprechels Securities Company, used by the guests of hotels at Coronado Beach, Cal. for pleasure purposes. She was built by Fellows & Stewart, and does 15 miles with a six cylinder Sterling Trident engine



At the left is the "Maris," sailed by its owner, Edwin J. Ahrens, of New York, in the race in which he won the "Elliott" trophy shown below.



Two Champions— Valsparred, of Course!



The "Faun"—Winner of the Gothenberg canoe races. Owned and sailed by William H. Lux of Brooklyn, N. Y.

LAST summer two new triumphs were added to the crown of Hilding Froling, the well-known canoe designer of Arlington, New Jersey. At home, the "Maris" won the Atlantic Division Championship of the American Canoe Association and with it the "Elliott" trophy. Abroad, the "Faun" was awarded the special trophy at the canoe races held in connection with the Athletic Games at Gothenberg, Sweden.

Both these winning canoes were built from designs prepared by Mr. Froling, and both were finished with Valspar.

Valspar is the ideal varnish for every kind of watercraft. Durable and waterproof, it never turns white. One application now will keep your canoe bright and ship-shape all season.

Valspar comes in colors, too—Valspar Varnish-Stains and Valspar-Enamels. The Varnish-Stains are Valspar itself plus transparent wood-stains in 6 shades. In the Enamels you have a choice of 12 non-fading, solid-covering colors: Red, light and deep; Blue, light, medium and deep; Green, medium and deep; Ivory; Bright Yellow; Vermilion; Gray and Brown. Also White, Black, Gold, Bronze and Aluminum.

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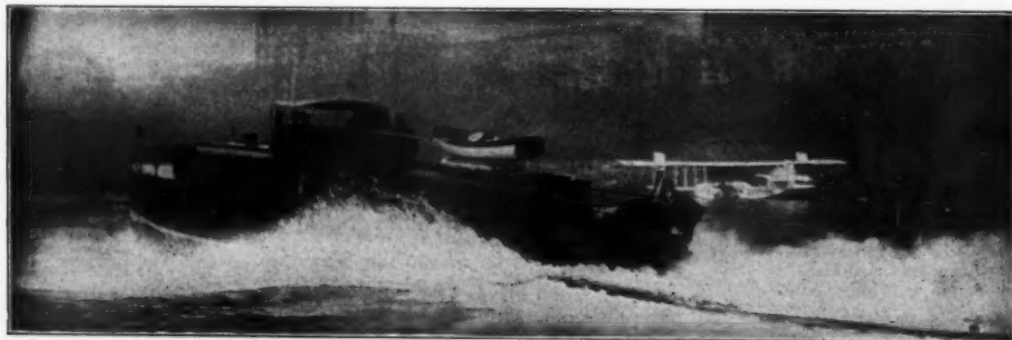
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Save time by traveling back and forth from your Summer home aboard a GAR JR. FLYER. Avoid the heat, dust and inconvenience of commuting by motor or rail.



The roomy bridge deck and forward cockpit seat 12 persons

Power plant consists of two twin-six "Liberty" motors developing 450 H.P. each, perfect in balance and control, absolutely reliable, and practically automatic in operation.



GAR JR. II completing record-breaking run from Miami to New York (outside route) 1260 miles at sea in 47 hours 23 minutes running time (21 min. less than schedule train time of famous "Havana Special")

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The first Koven tank factory in Jersey City, established in the early eighties of the last century



A Million Dollar Tank Factory

Where Boat Tanks Are Turned Out by Hundreds
with All the Economy of Quantity Production

by WALTER F. BAILEY



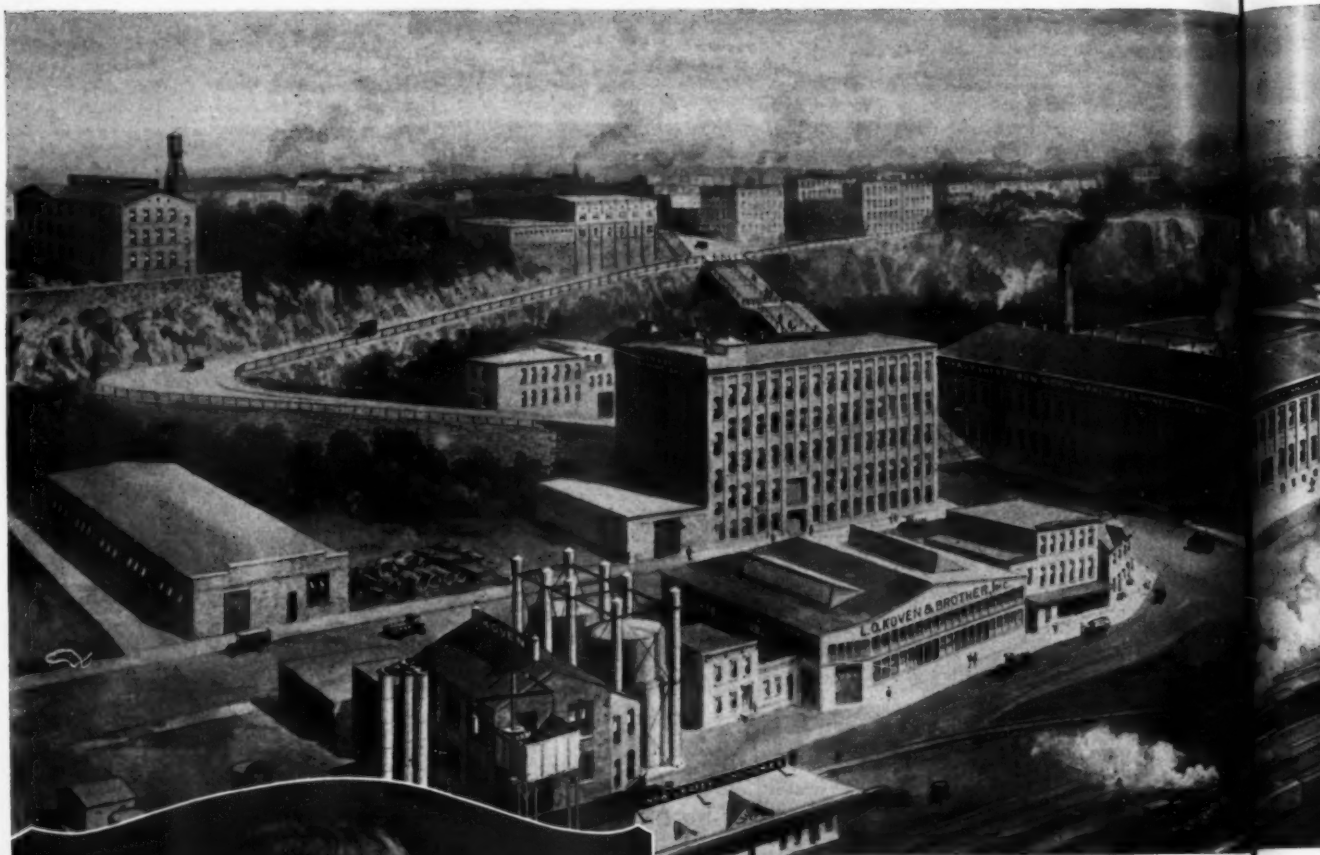
The original members of the Koven firm, (left to right) Theodore Hepe, William Koven and Ludolph O. Koven

IF anyone should ask you suddenly, "Who makes motor boat tanks?" you would probably reply "Koven" without a moment's hesitation. Everyone who has had anything to do with boats during the past thirty or forty years has learned to associate this name and the product without conscious effort. But with all this ready familiarity, I wonder if it has ever occurred to you what a great business has been built up to meet the demand for Koven tanks.

It is surprising to find that the Koven plant is one of the largest industries serving the motor boat trade today, a giant in its own line with a list of patrons which includes many of the best known manufacturers and shipbuilders in the country. And it is more surprising to learn that in addition to producing tanks of all sizes and varieties for all purposes, the Koven organization maintains an excellent engineering staff which has designed scores of novel and complicated machines and equipments for special industrial uses. With their help many a manufacturer has gained a lap on his competitors by finding a better, quicker or cheaper way to handle some step in his factory processes.

That is one reason why it is so easy for Koven to meet the peculiar requirements for boat tanks and other marine equipment made of sheet metal, where it is often necessary to follow a new design or build a special shaped tank to fit snugly in bow or stern or under the floor, to get maximum storage capacity in minimum space. Their workmen are trained for just this kind of special work and the completeness of their shop equipment and facilities makes the most intricate job comparatively simple and inexpensive.

This business was started in New



Mr. Gustav H. Koven, President and General Manager of L. O. Koven and Brother, Inc.

York City forty-three years ago by William Koven and Theodore Hepe. The founders were successful from the first and they soon discovered that the business required room to grow and special facilities for receiving, handling and shipping the heavy materials they used, so they procured a two story frame building, 50 ft. by 100 ft. in Jersey City on the site of the present plant. This little factory has developed and expanded continually since then until it now covers several acres and has a total floor space of more than 150,000 square feet in a dozen different buildings.

After the original partners retired in 1897 the Koven business was conducted by the two sons of the founder, L. O. Koven and G. H. Koven, until the decease of the former a year ago; it has recently been incorporated as L. O. Koven and Brother, Inc., with Mr. G. H. Koven as President and General Manager, L. O. Koven, Jr., as Vice President and Treasurer, and Theodore Koven, M. E., as master mechanic of the plant. The story of how the Koven plant has grown and prospered under the present management is typical of modern American business history,—a story of steady and sometimes rapid progress, of honest products honestly built, of improved equipment for economical production of everything in the line of heavy sheet metal work.

It is interesting to compare Koven methods with the ordinary conception of tank making. Big shears weighing several tons cut up quarter inch iron plates like sheets of paper. Other machines punch out 5 or 6 dozen rivet holes at a time as easily as though they were cutting cheese. Every operation is handled by power machinery that minimizes the labor and the cost while improving the quality and uniformity of the workmanship.

Big vats of molten spelter make it possible to galvanize every tank inside as well as outside, no



matter how large the tank may be; after thoroughly cleaning with acids, each tank is lowered into the splter from an overhead crane so a heavy coating of zinc covers every bit of the surface and penetrates every crevice where the parts are joined. After this a test with air pressure at 150 lbs. to the square inch proves that the tank will be leakproof for a lifetime of service.

Larger tanks and boilers are manufactured in the heavy plate steel department. There are also separate departments for gas and electric welding, copper tank making, etc. The machine shop is a five story brick building which is as completely equipped as though machine work were the principal product instead of merely incidental to the manufacture of other products.



A typical Koven Boat Tank of special size and shape for installation in the bow of a motor yacht

ing and other purposes throughout the different shops. Raw materials are brought in on their own railroad sidings and

finished products are loaded directly onto the cars of the New Jersey Junction Railroad and West Shore Railroad which connect with every trunk line entering the port of New York.

The engineering department and general offices of the corporation are located adjacent to the plant and occupy a three story building, 60 x 100 feet. All departments of the office and plant are directly connected by an automatic telephone system and by direct wire with the New York City warerooms at 50 Cliff Street.

One noticeable feature of the Koven organization is that its present size is an evolution of long and steady growth in contrast with many manufacturing plants which expanded like mushrooms under the stimulus of war work and have been burdened with idle machinery and excessive overhead expense ever since. In this plant the variety of products is so great that all departments are kept busy the year around and

Mr. Ludolph O. Koven, head of the Koven organization for many years until his decease



this permits operating under the best conditions for economy in production.

If you order a boat tank from Koven, or anything else made of sheet iron, plate steel, copper or monel metal, you can rest assured that the quality will be right and that you will get the lowest price consistent with that quality, simply because their experience and equipment for this kind of work is unequalled. You can be sure of quick delivery because of their large stocks of raw and partly finished materials, their complete machine facilities and large corps of workmen. And as they are accustomed to building special tanks and other products to specifications you will have no difficulty in getting individual service for your order if it is for something not regularly carried in stock.

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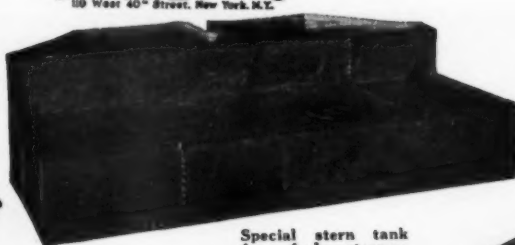
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Oily waste can.



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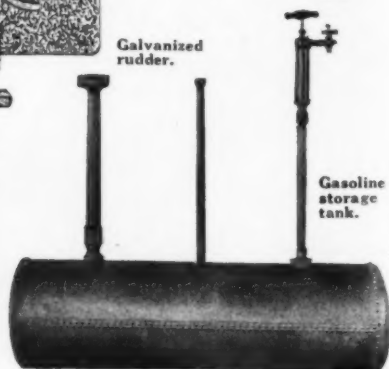
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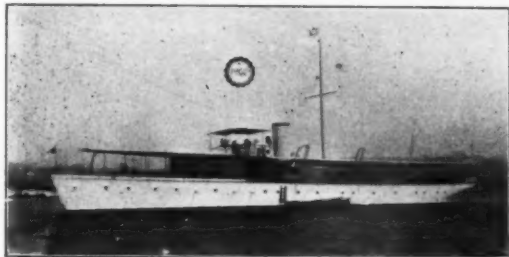
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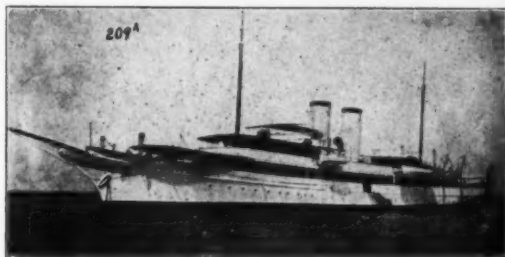
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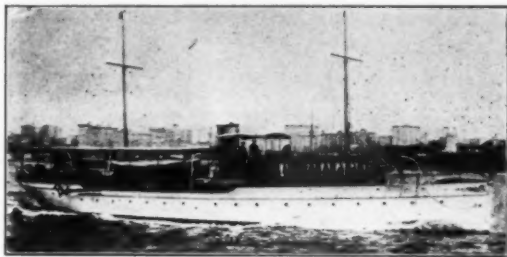
On this page are shown a few representative yachts selected from our large lists. Should none appeal kindly acquaint us with your requirements. Full information regarding costs to build, purchase or charter yachts of all types gladly furnished.



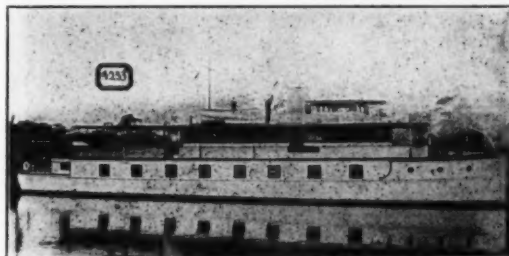
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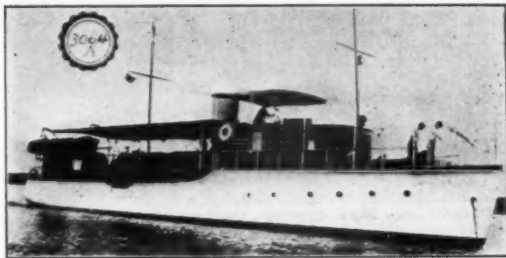
No. 209—For Sale or Charter—Large, sea-going steam yacht. Palatial accommodation. Sacrifice for immediate sale. Several similar larger and smaller available craft. Cox & Stevens, 25 Broadway, New York.



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No. 2758—For Sale—Exceptionally roomy power yacht; 65 x 13 x 3' 6" draft. Speed 10 miles; 65 H.P. 20th Century motor. Accommodations include double and single staterooms, saloon with two transom berths, bath and toilet room aft; dining saloon in deckhouse forward. Deck space unusually large. Independent electric light plant. Cox & Stevens, 25 Broadway, New York.



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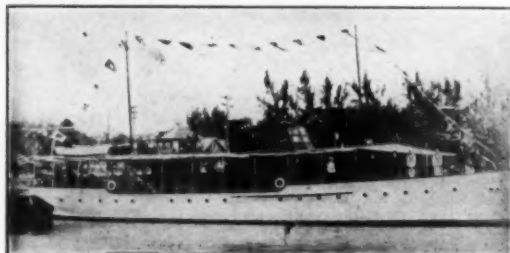
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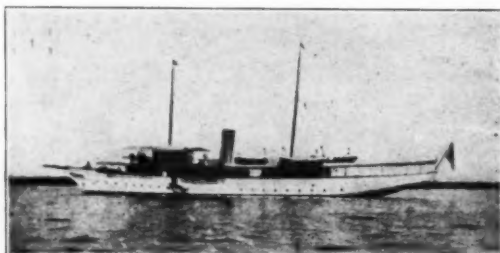
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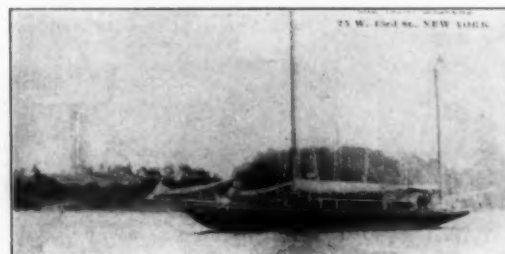
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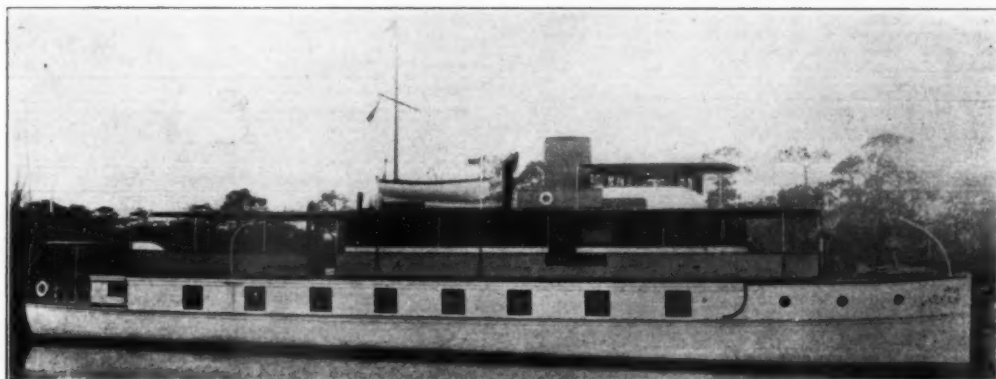
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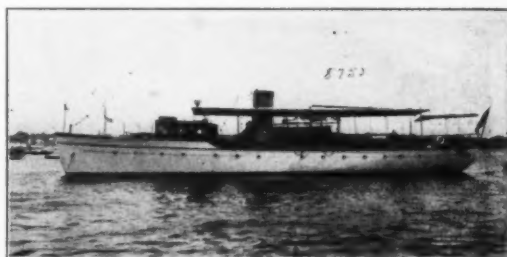
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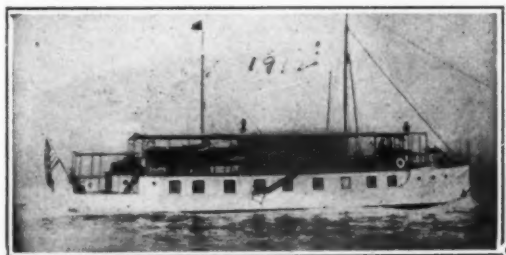
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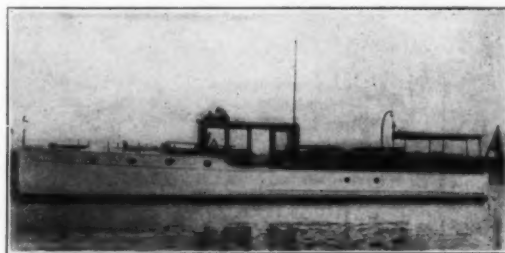
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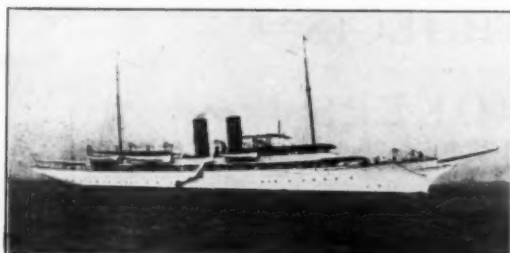
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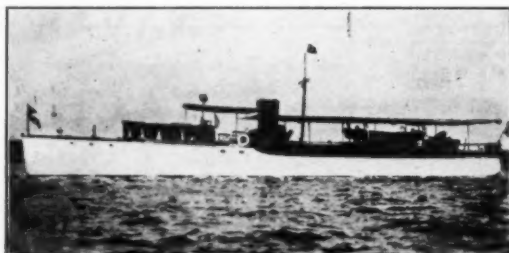
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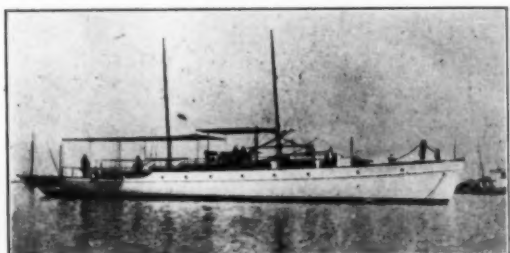
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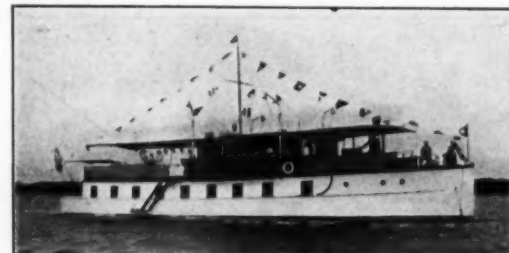
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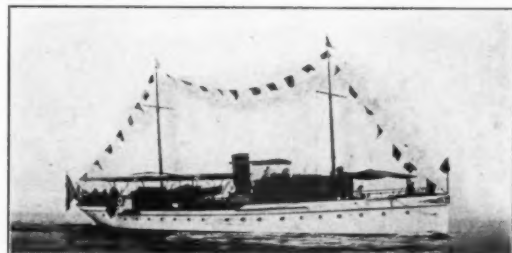
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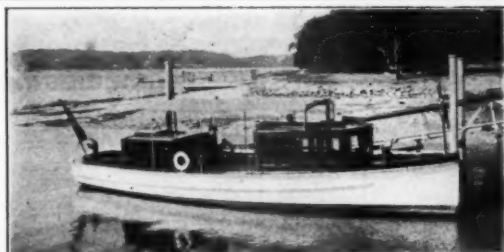
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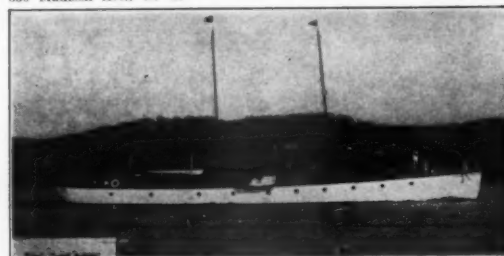
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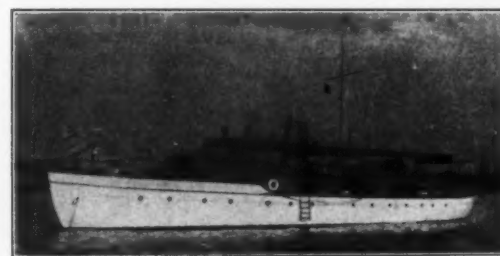
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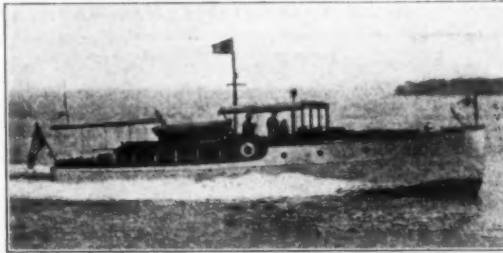
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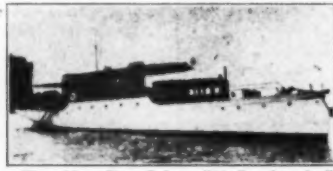
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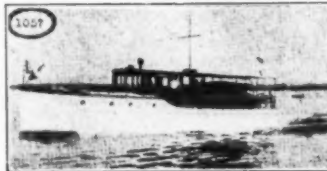
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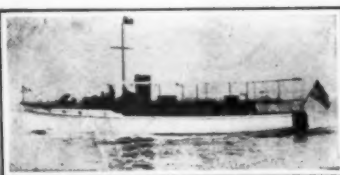
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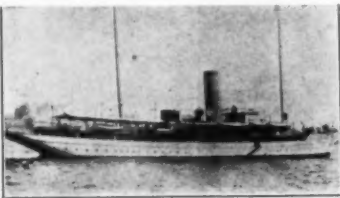
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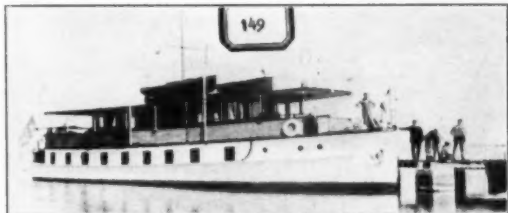
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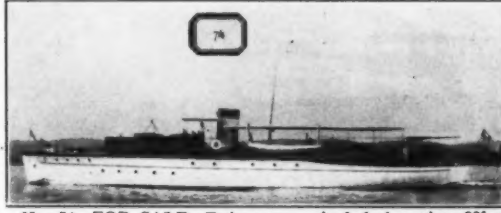
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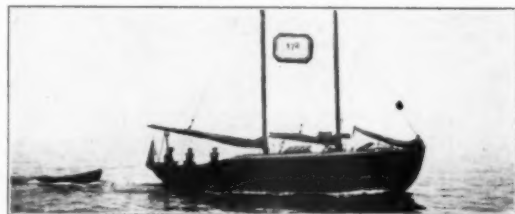
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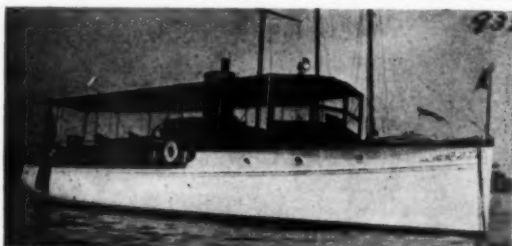
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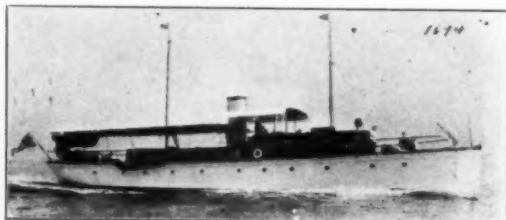
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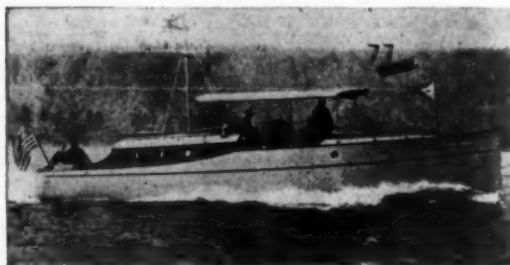
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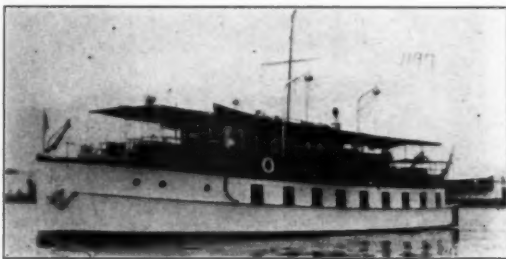
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No. 1694—For Sale—Attractive 90' Twin Screw cruising yacht; speed 13-14 miles. 3 staterooms, saloon, bath, etc. Excellent condition.



No. 77—For Sale—43' Express Cruiser. Speed 17 miles; 1 double stateroom and saloon; galley, etc. Of the best construction. Handles very easily.



No. 1197—For Sale or Charter—80' twin-screw cruising houseboat, speed 13 miles; 4 staterooms, 2 bathrooms, etc. Beautifully furnished.

THE FLOATING YACHT BROKER'S OFFICE

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TEL. 6714

SEE CASEY 30 FT. O. A. SLOOP BELOW

PAUL M. RUNYON

Present Location: Somewhere Along the Atlantic Coast.

Home Port: P. O. Box 603 New Bedford Mass.

**MARINE
 INSURANCE**



No. 207—Cruiser, L.O.A. 32', L.W.L. 26'6", Beam 6'9", Draught 2'4". Excellent condition. Fully equipped for cruising. Price attractive. Paul M. Runyon, P. O. Box 603, New Bedford, Mass.

I am the Casey 30-foot Sloop.
 Of whom you have all heard mention.
 I travel around from port to port
 In order to pass inspection.

In Summer I stick to a northern clime
 From New York up the coast.
 While in Winter I search for a Southern place
 No matter if I roam.

If people liking the looks of me
 Will write to my home port
 And let me know their own address
 And the nearest place to stop.

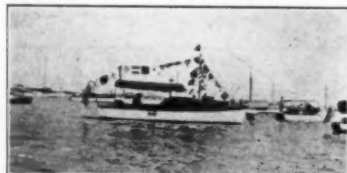
I'll let them know when I'll be there,
 And then they'll soon find out
 What a dam fine job they'll get
 If they'll purchase a Casey boat!



THE CASEY 30' O. A. SLOOP

Dimensions: L.O.A., 30'; L.W.L., 23' 3";
 Beam, 8' 6"; Draught, 4' 6".

IT is my intention to use one of the Casey 26' or 30' O.A. Sloops for demonstrating purposes during the approaching Spring and Summer. I expect to cruise through Long Island Sound during latter part of the Spring and will probably sail along the Massachusetts coast and up toward Maine later in the season. Those who are interested in the Casey boats are hereby requested to let me know their addresses. I will then advise them when I will be in their vicinity, and will arrange to give any one a practical demonstration of this little sloop's sailing qualities. Information regarding a large number of second hand boats has been collected from all ports along the coast by the floating office.



No. 224—Cruiser L.O.A. 45', L.W.L. 43', Beam 11'6", Draught 3'6". Accommodations for 8 people. Lighted by electricity. Located near New York. If you want a bargain nab it quick.

Sometime I'll be near you.
 No matter where you are,
 So do not hesitate to write,
 Not even from afar.

I stop at every boat yard
 As I sail from port to port.
 And I find the boats that are for sale
 And those that might be bought.

I get the boats that suit your eye
 And also suit your purse.
 As I float along like a wafted song
 Mid Ports along the coast.

Should your inquiry come from a port in Maine,
 I will find you a boat at Bath
 Or, should you write from a hotter clime,
 I'll get you a boat in the South.

I find the boats that can't be found
 In every broker's hands,
 As I get them all, both large and small,
 From far remoter lands.

Signed, The Floating Office.

If You Could Be Assured
of getting a thoroughly reliable boat delivered
to you in perfect running order, ready for
your use,

would you be interested?

I have several that I can recommend.

My twenty-five years' experience in building
and selling Motor Boats and Yachts qualifies
me to give you expert advice.

Service that makes Satisfaction Sure

If you wish to purchase, or to charter, tell me what you want.

If you have a desirable boat you wish to sell, tell me about it.

THOMAS S. HANSON BROKERAGE
Personal Service

Formerly General Manager of The Elco Works, of Bayonne, N. J.

19 WEST 44th STREET

Telephone, Murray Hill 8676

NEW YORK CITY

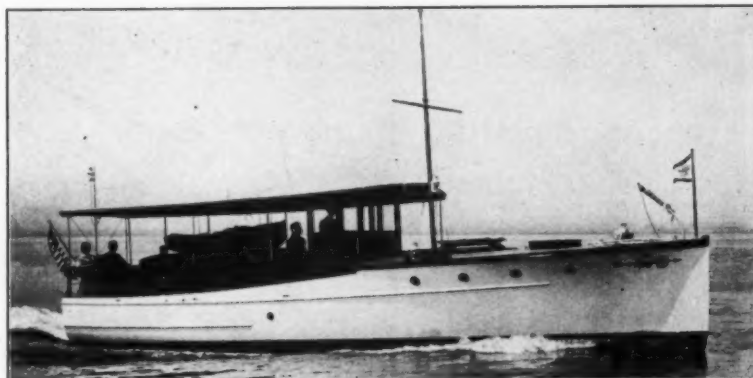


LATEST MODEL 40-FOOT ELCO
CRUISER.

For Sale—Only used a few months. Will be delivered with engine overhauled, boat freshly painted for you, all in guaranteed running order. Has all latest improvements; Bridge Windshield, Spring cushions, two toilets, Dinghey and Davity; Searchlight, etc. Length 41 feet 6 inches. Beam 9 feet 9 inches. Draft 3 feet. Elco Engine with Starter and Electric Plant. Private Stateroom, Saloon and unusual Galley. All conveniences to comfortably sleep eight. Very economical and seaworthy, can go anywhere. Price most favorable. Address Thomas S. Hanson, Yacht Broker, 19 West 44th St., New York City.

LATEST MODEL 45-FOOT ELCO CRUISER

For Sale—New last August. Opportunity to obtain one of these splendid Cruisers, all freshly painted and overhauled. In guaranteed running order, ready for use. Length 45 feet. Beam 11 feet 4 inches. Draft 3 feet. Elco Engine and Starter; very reliable and economical. Delightful Private Stateroom; large Saloon; fine Galley; two Lavatories. All conveniences for sleeping seven. Regular equipment, with many extras. Dinghey, Searchlight, Auxiliary Electric Plant, Radio Outfit, etc. Has Bridge Windshield. Price most favorable. Address Thomas S. Hanson, Yacht Broker, 19 West 44th St., New York City.



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 63' x 13' x 3' 10" Raised Deck. (2) 37 H.P. Standards. Three staterooms.
 67' x 11' 10" x 4' 6" Bridge Deck. 85 H.P. Sterling. Two staterooms.
 65' x 14' x 4' 7" Bridge Deck. 80 H.P. Winton. Two staterooms.
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 41' x 9' 5" x 3' 3" Bridge Deck. 85 H.P. Van Blerck. Two staterooms.
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 40' x 9' x 3' 6" Trunk Cabin. 85 H.P. Fay & Bowen. 14' cockpit.
 39' x 9' 6" x 2' 6" Raised Deck. 25 H.P. Lamb. Exceptional bargain.
 38' x 11' 6" x 3' 6" Raised Deck. 35 H.P. motor. Completely equipped.
 32' x 9' x 2' 6" Raised Deck. 20-35 H.P. Sterling.
 32' Elco Cruiserette. J.V.B. engine. Boat in first-class condition. Fully equipped.

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- 65' x 5" x 12' 6" x 3' 4" Mahogany hull. (2) 8 cylinder Sterlings.
 62' x 12' 6" x 3' Great Lakes Cruiser. (2) 6 cylinder Speedways.
 57' x 11' x 4' Large Inclosed Bridge. 125 H.P. Van Blerck.
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 52' x 12' x 3' 6" Inclosed Bridge. 450 H.P. Liberty.
 50' x 10' 6" x 3' 9" Great Lakes Cruiser. 200 H.P. Van Blerck.

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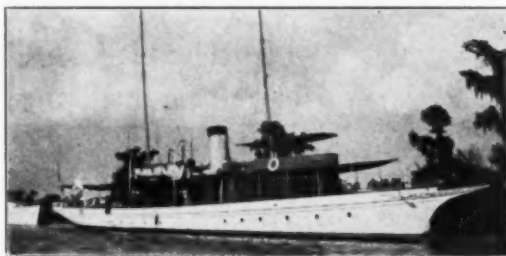
- 45' x 14' 6" x 3' Houseboat. 80 H.P. Buffalo.
 52' Mathis Houseboat. Standard engine.
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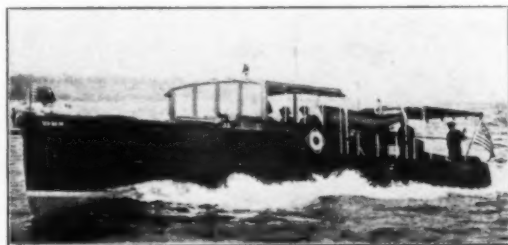
- 26' x 8' x 3' 6" Auxiliary Yawl. 6 H.P. Caille.
 38' x 11' 4" x 3' 6" Auxiliary Yawl. Palmer engine.
 40' x 12' x 3' 6" Auxiliary C. B. Sloop. 6 H.P. Lathrop.
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 55' x 6" x 18' 6" x 5' Schooner Yacht. Excellent condition. Will sell cheap.
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 63' x 6" x 15' 6" x 4' Auxiliary Yawl. Scripps engine.
 70' x 15' x 9' Auxiliary Schooner. Lathrop engine.

And many other type yachts and commercial boats.

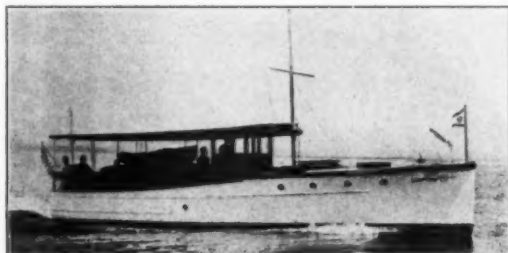
YACHTMEN'S SERVICE AGENCY
 1233 Real Estate Trust Building, Philadelphia, Pa.
 PHONE: Walnut 4830



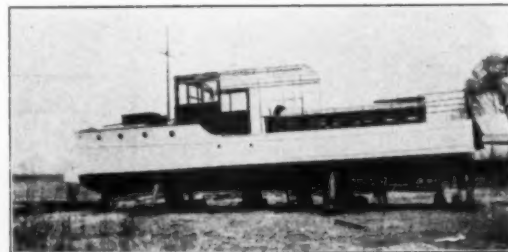
130' x 16' 9" x 6' 6" Steam Yacht. 400 H.P. engine. Boiler new 1920 with crude oil burning attachment. Two large staterooms accommodates ten in saloon, hull cypress, copper fastened, teak and mahogany interior finish. Sufficient deck area for 156 persons, two life boats and life raft. For further particulars write to Yachtmen's Service Agency, 1233 Real Estate Trust Bldg., Phila., Pa.



54' x 11' x 3' 4" Great Lakes Express Cruiser. (2) Van Blercks, 200 H.P. each. Mahogany planked, a very handsome and fast boat. For further particulars write to Yachtmen's Service Agency, 1233 Real Estate Trust Bldg., Phila., Pa.



45' x 10' 7" x 3' 4" Elco Cruiser. Four cylinder Standard engine. Self-starter and generator. Boat put in first-class condition this spring. Completely renovated inside and out. For further particulars write to Yachtmen's Service Agency, 1233 Real Estate Trust Bldg., Phila., Pa.



41' 6" x 9' 6" x 3' 3" Bridge Deck Cruiser. 85 H.P. Van Blerck. Boat built in 1922. V-bottom. Speed twelve miles. Saloon and galley forward, two double staterooms aft. Boat in first-class condition. For further particulars write to Yachtmen's Service Agency, 1233 Real Estate Trust Bldg., Phila., Pa.

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New Address New York City

50-52-54 WEST 17th STREET

BRUNS KIMBALL & CO.

New Address Philadelphia

102 SOUTH 4th STREET

The largest dealers in new and rebuilt marine engines in the world

FOR SALE

One pair (right and left hand) six cylinder 9 1/4 x 14" 200 H.P. Winton Model 11 Engines in splendid condition for immediate delivery. Motor Boating, Box 112.

FOR SALE.—Runabout Panhard, Mississippi Valley Champion 1921. Electric Starter, etc. Ready to run. Also motors all kinds 25 to 400 Horsepower including Erd 30 Horsepower. F. T. Holliday, Indianapolis, Indiana.

For Sale or Lease.—Complete Boat Building Plant for moderate sized boats. Best location in World near New York. Address Paine, 36 Clinton St., Newark, N. J.

College man would like position for summer on small motor boat. Steady and a worker, experienced on boats and engines. Address J. A. Allen, 1736 Green St., Phila., Pa.

Raised deck cruiser, 47'6" x 12' x 3'. Standard motor, 32-37. Electric lights; sleeps eight. Full equipment. Best bargain in Long Island Sound. Inspected Port Jefferson, Long Island. Price, \$4,000.00. Charles S. Fox, Fairfield, Conn.

For Sale.—Eleven foot Sea-Sled and Elto outboard motor, \$150.00. Dr. Koenig, 1394 Union St., Brooklyn.

FOR SALE.—Double planked Mahogany Lifeboat type with Cabin in which is a toilet room. Length 38 1/2 ft., 9 ft. beam, draws 30". Water tight bulkhead in bow and stern. Solid Mahogany throughout, windshields, engine entirely enclosed, large storage space. Khaki top quick acting side curtains.

ENGINE.—Fay Bowen 6 cylinder, 50 H.P., Starter, Generator, Magneto, Electric Lights, speed at 650 R.P.M. 12 miles. In perfect condition; run only 1,000 miles. Gas capacity 5 copper tanks, 200 gallon, water capacity 2 tanks, 50 gallon. All fittings brass or copper. Wonderful sea boat. Engine and boat guaranteed in perfect condition. Price \$4,500; cost over \$15,000. Box No. 115, Motor Boating.

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Friction contact with engine flywheel.
3 sizes.

TRIMOUNT ROTARY HAND BILGE PUMPS

All bronze composition. Suction lift 6 to 20 feet.
3 sizes.

A tremendous success—a high-speed, bronze Power Pump for \$15.00

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For Sale.—30 foot Elco Express Cruiser—fully equipped—perfect condition. Price very attractive. Address, O. A. Klausmeyer, c/o The Anchor Top & Body Company, Cincinnati, Ohio.

Motor Boat, 18 foot, Hand V Bottom, mahogany hull, 8 H.P., 2 cylinder, Caille Unit Plant, reverse gear bulkhead controls, cushions erico, universal shaft, log lights, auto top perfectly new, will sacrifice must see to appreciate. Weider, 885 East 181 St., New York City.

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The Hudson River Yacht Club is prepared to accept new members under advantageous conditions. Attractive clubhouse, restricted membership, good anchorage, most convenient location. Commodore E. Spindler, Hudson River Yacht Club, West 92nd Street, New York City.

FOR SALE.—One 4 cylinder Winton, direct connected, generating plant 5 KW. Percy M. Child, 1110 Fourth St., N. W., Washington, D. C.

For Sale.—26 foot speed boat designed for Sweep Stakes Class. GREAT LAKES BOAT BUILDING CORPORATION, Milwaukee, Wis.

For Sale or Trade.—Cabin Cruiser, 35 x 9 x 3, two cabins, toilet, galley, icebox, sink, running water, four cylinder motor, starter, electric lights, tender, davits, complete cruising equipment. Oak, cedar and mahogany construction. Practically new. First class condition. In commission. \$2,000 cash or trade for auxiliary. "Edna," c/o Rac Bros. (Elmhurst P. O.), North Beach, Long Island.

STATEMENT of the Ownership, Management, Circulation, Etc., required by the Act of Congress of August 24, 1912, of MOTOR BOATING, Published monthly at New York, N. Y., for April 1, 1924.
State of New York
County of New York

Before me, a Notary in and for the State and county aforesaid, personally appeared C. F. Chapman, who, having been duly sworn according to law, deposes and says that he is and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 413, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, International Magazine Company, 119 West 40th Street, New York City; Editor, C. F. Chapman, 119 West 40th Street, New York City; Managing Editor, C. F. Chapman, 119 West 40th Street, New York City; Business Manager, C. F. Chapman, 119 West 40th Street, New York City.
2. That the owner is: (If the publication is owned by an individual his name and address, or if owned by more than one individual the name and address of each, should be given below; if the publication is owned by a corporation the name of the corporation and the names and addresses of the stockholders owning or holding one per cent or more of the total amount of stock should be given.) International Magazine Company, 119 West 40th Street, New York City; Star Holding Corporation, c/o Corporation Trust Co. of America, Wilmington, Del. Sole Stockholder, W. R. Hearst, 137 Riverside Drive, New York.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect in the said stock, bonds, or other securities than as so stated by him.

C. F. CHAPMAN, Business Manager.
Sworn to and subscribed before me this 24th day of March, 1924.

(Seal) WILLIAM J. SPERL
Notary Public, Queen's County, No. 3717.
Certificate filed in New York County, No. 1949.
Reg. No. 5832. Commission expires March 30, 1925.

MOTOR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York

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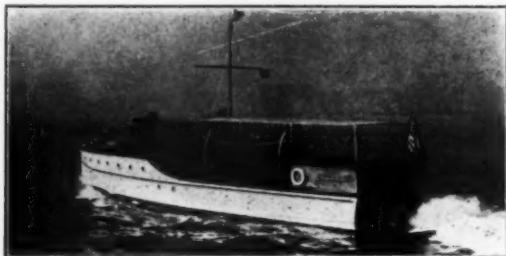
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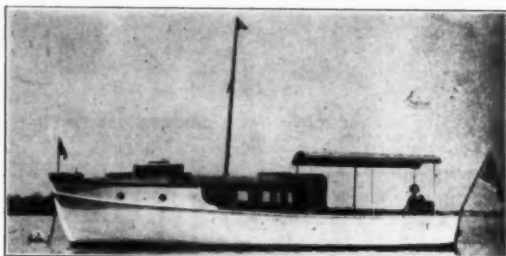
Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR Boating.

MoToR Boating, 119 West 40th St., New York



For Sale—Reasonable price, 57 ft. 9 in. x 12 ft. x 3 ft. 6 in. draft. Express cruiser, especially built for Florida waters. Inquire A. H. Schmidt, 508 Monroe Avenue, Detroit, Michigan.



31' x 8' x 2' 8" 6inest construction and condition throughout, full head-room, five berths, white enamel and mahogany finish, new 24 H.P. Palmer, 4 cylinder, 4 cycle, \$2,500, in commission. Wm. C. Atwater, Jr., Owner, 1 Broadway, N. Y. City. Phone Bowling Green 8421.

Big Free List 100 engines, 1 to 220 H.P. Send for it and state your power needs. 6 H.P. Gray, two cyl. 65—15 H.P. Ferro, two cyl. \$95; 18 H.P. Fairbanks-Morse, three cyls. \$115; 25 H.P. Ferro, three cyl., \$165; 24 H.P. Waterman four cyl. light weight, \$145. Four cycle, 12 H.P. Buffalo and gear, \$135. 16 H.P. Dunn four cyl. \$85. 20 H.P. Truscott three cyl. 6 x 6, \$225. 16 H.P. Holliday two cyl. 6 x 7, \$185; 20 H.P. Doman two cyl. 7 x 8, \$275; 40 H.P. Campbell 4 cyl. 6 x 6 and gear \$425. 50 H.P. Clifton 4 cyl. 6 1/4 x 6 1/4 and gear \$450. Bosch magnetos, carburetors, generators, starters, at low prices. Badger Motor Co., Milwaukee, Wis.

1—20 H.P. Unit F. Bosch magneto \$425.00
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 1—12 H.P. Unit C. Atwater Kent 300.00
 2—12 H.P. Separate F. Bosch magneto .. 150.00
 These motors have all been overhauled, re-tested, refinished in absolutely perfect condition. Guaranteed for a period of one year just the same as a new motor. Kermash Mfg. Co., 5880 Commonwealth Ave., Detroit, Mich.

For Sale—Herreshoff Yawl, 43 ft. x 12 ft. x 4 ft. Sails and rigging excellent condition; absolutely sound. Peerless 25-35 motor, excellent condition, 4 single berths, each fitted with coil springs, 2 toilets, 2 folding wash basins, ice-box and all improvements, including electric lights. Fast under sail. Speed under power—10 miles. Boat may be seen at Chance Marine Constr. Co., Eastport, Annapolis, Maryland. For price write Guy W. Latimer, Hyattsville, Md.

FOR SALE \$1350

New 22 ft. Sea Skiffs

Complete with 1924 NJM Motors, Hand Starters and Bosch Magnetos.



BOATS built, overhauled, repaired and painted. ENGINES overhauled, repaired, and installed. New and second-hand boats and motors for sale. Boats called for and delivered.

NEW JERSEY MOTOR BOAT CO.

137 Front Street, Keyport, N. J.

Telephone, Keyport 179

Don't Pay Cash Buy Your Motor on the Easy Payment Plan

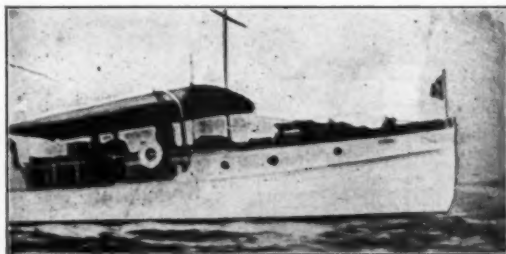
You Can Buy Any Make Motor
Through Us on the Installment Plan

WRITE FOR TERMS

J. WORTSMANN

154 Nassau Street

New York



The Firefly, 36' x 9' x 3' 8", bridge deck cruiser, one man boat. Boat and engine built by Woods & Chute of Greenport. Heavy construction. Engine 4 cylinder, 46 H.P. heavy duty Bosch equipped. Two cabins, sleeping four. Electrically lighted and started. Finished in enamel and mahogany. In absolutely perfect condition. Now in commission. L. W. Flaunlacher, 25 West Thirty-third St. Telephone: Penn. 5341.

THE QUESTION IS—

Who should take the risk until your engine has proved itself? With the non-committal guarantee generally given by the ordinary engine dealer and manufacturer you are the one who takes this risk.

But if you buy an engine from us, whether new or one of our Guaranteed Rebuilt Engines, you take absolutely no chance because we take all the risk. If the engine doesn't make good for you, we will. You must receive absolute satisfaction before we consider the transaction closed.

And you can rest assured we do not broadcast such a broad guarantee without making doubly sure that each engine is 100% perfect before it is shipped.

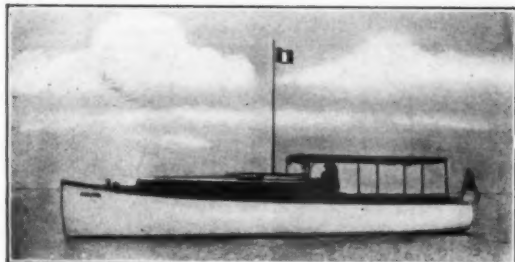
*My word
is good
D.C. MacNeill*

MARINE ENGINE Co.

of PHILADELPHIA

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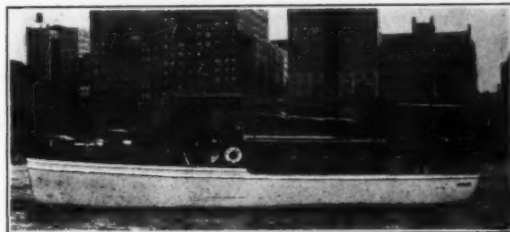
MACHINERY EXHIBIT
BOURSE BUILDING
PHILADELPHIA, PA.



ANITA — FOR SALE

Trunk cabin cruiser—1923 Standard Engine under cockpit, trunk cabin over—length 42 feet, 10 feet beam, draught 2 feet, 8 inches—planked 1½ inches white cedar, 1¼ x 2½ ribs, 10 inch centers, cockpit 12 feet 10 inches by 8 feet, gasoline capacity 140 gallons, fresh water, 50 gallons, all copper fastened. Two cabins—spacious toilet room—complete galley, absolutely in new boat condition throughout—speed ten to twelve miles—this boat must be seen to be appreciated and at present is out of water in my boathouse.

Richard G. Ledig, 34 Bay Avenue, Ocean City, N. J.



"NAIAD" 38' x 10 \$2,500 Cash

This boat only in the water two seasons cost \$5,500 for the hull alone. Has 37 H. P. heavy duty motor and travels steadily at 10 miles per hour. Sleeps 2 forward and 4 aft. Complete with the refinements an owner in the marine supply business would put on his own boat. Pullman berths, new cushions, new electric lighting outfit, new galley, new wicker chairs, new 9' sea sled dinghy, etc. There is no better hull to be had at any price. The first cash buyer takes her. Can be seen in N. Y. City.

W. E. Willis—Worth 3624—85 Chambers St., N. Y. City

40' x 9' x 3' Semi-Day Cruiser. Large 14' cockpit staved with mahogany. Solid mahogany interior finish. Six cylinder, 65-85 H.P. Fay & Bowen motor, new 1921, self-starter and generator. Speed 14 miles. Plenty of deck space around sides of cabin. Excellent boat for short cruising and fishing. For further particulars write to Yachtmen's Service Agency, 1233 Real Estate Trust Bldg., Philadelphia, Penna.

Liberal Loans made on boats, New York vicinity. Write Robinson, 100 West 54th Street, New York City.

For Sale—Roomy V-Bottom Cruiser, 30' x 8' 6" x 2'. Equipped with new Kermath 50 H.P. double ignition, electric starter, Willard battery, Toedt muffler. Hyde wheel. Double gas tank with reserve gas tank. Also, reserve oil tank piped to motor.

Spark and gas controls on steering wheel. Starter, engine and running lights switches, oil gauge. Ammeter, Elgin Tachometer on panel. Complete running equipment, refrigerator, toilet, table, chairs, cushions, curtains, fenders, ropes, anchors, electric lights, etc. This boat handles as easily as a car, trolling speed to 13 miles guaranteed. It is in good condition ready to launch. If you want this up-to-the-minute boat at a very reasonable price, Write or see W. S. Preston, 17 Upper Church St., Burlington, Vt.

FOR SALE at a sacrifice. 65 ft. cruiser. Everything in first class condition. Owner must sell immediately. Asking \$5,000. Make offer. When you get the particulars and photo you will be surprised that such a yacht is offered at such a low price. SOUTHERN YACHT AGENCY, American Building, Baltimore, Maryland.

For Sale—Runabout, 28 ft. x 5 ft. 4 inches, powered with a D 6 cyl. 75 H.P. Scripps, completely and beautifully equipped in every way. Speed 23 miles, runabout champion 1920 M. V. P. B. A. Ass'n Regatta. Photographs and details to interested parties. Evan F. Morris, Quincy, Ill.

For Sale—34' cruiser built 1922, speed 9½; very seaworthy; heavy construction. Make offer. Roy Caine, Obourg, Ontario, Canada.

300 PROPELLERS 300

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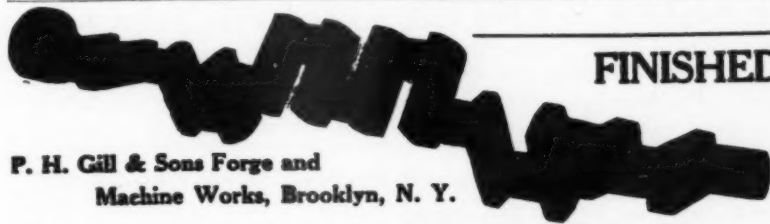
1195 Atlantic Ave., Brooklyn, N. Y.

WANTED FOR CHARTER—Sail boat, not more than 50 foot overall. Sloop, Yawl, or Ketch. For use on Long Island Sound during July and August. Must be desirable boat in good condition and be delivered in commission with Sailing Master. Send full information, Thomas S. Hanson, 19 West 44th street, New York City.

WANTED for RENT OR CHARTER—Runabout Launch approximately 30 ft. long by 6 ft. beam. Suitable for use on Long Island Sound during July and August. Must be good seaworthy boat delivered in operating condition. Send full information, Thomas S. Hanson, 19 West 44th street, New York City.

For Sale—Cruiser 48' x 9', Palmer 4 cylinder, new; one man control; all modern conveniences, 3 cabins, comfortable, complete outfit. Rieger, 521 W. 151st St., N. Y. C.

Bijur generators, 3rd brush regulation, clockwise rotation, maximum output 22 amperes at 2000 R. P. M. 6 volts. Ample capacity for all running and cabin lights, any single hander. Brand new, condition guaranteed. Price \$15.00. General Sales Company, 1919 S. Michigan Avenue, Chicago.



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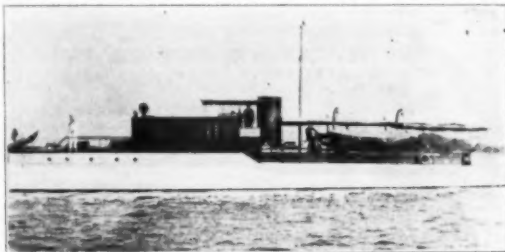
No. 2335—For Sale—Attractive, commodious, twin screw cruising power yacht: 83' x 13.6' x 3.6'. Speed up to 14 miles. Two 75 H.P. 6 cyl. 20th Century motors; Bosch high tension magneto ignition. Deck dining saloon forward; aft are two double and one single staterooms, bath and two toilets. Independent electric light plant. Handsomely finished and furnished. Deckhouse, etc., of teakwood. Unusual deck space. Excellent condition. Fully equipped as shown. Low price accepted for prompt disposal. Cox & Stevens, Cunard Building, 25 Broadway, New York. Telephone 2700 Whitehall.



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One left of our Standard Hunting Cabin Launches, 7 ft. beam, 2 ft. draft. Has a large comfortable cabin. Large cockpit. These launches are handsomely finished, fast, able and very easy in rough weather. Built in our best fashion. A great Bargain. Write us for particulars.

MARBLEHEAD YACHT YARDS, INC. Marblehead, Mass.



FOR SALE OR CHARTER—82 ft. Lawley built Cruiser. Standard Engine. Speed 15 miles. Perfect condition throughout. Best yacht of its type available. Will charter for a reasonable price or sell at less than half cost. SOUTHERN YACHT AGENCY, American Building, Baltimore, Md.



FOR SALE—Gordon cruiser, 28' x 8' x 2' 3/4". 20 H.P. Kermath, self starter, mahogany finish. Complete new equipment. New last fall. Used only two months. \$3,500. A. H. Crosby, 249 Oxford St., Hartford, Conn.



FOR SALE—62' Great Lakes cruiser as good as new. Twin screw. Speed 23 miles. Owner anxious to sell, as he has bought larger yacht through us. Make offer. SOUTHERN YACHT AGENCY, American Building, Baltimore, Md.



For Sale—26' x 10 1/2' Cat-Boat, small auxiliary. Motor in good condition. Price \$325. A. J. Unneberg, 10 Rose Ave., Glen Cove, New York.

FOR SALE OR TRADE

"ADIEU" Hacker built and designed Runabout. 32' x 6' 6". Powered with 400 H.P. Packard Liberty Motor, Delco Starter. Motor installation by Hacker. Forward cockpit seating three people, rear cockpit five. Double planked bottom, copper riveted. I will trade for Cruiser 40 to 50 ft. Will add some cash for a boat that is a good buy. Guaranteed in first class condition in every respect. 45 miles per hour. Just the boat to win at your local races this summer. Deal directly with owner. "ADIEU" stored in New York. Address J. A. Mellish, No. 312 Riverside Drive, New York, for further particulars. Demonstration may be had by appointment.

For Sale—Cedar hull St. Lawrence River runabout 25 x 5. Oak keel and ribs, mahogany finish, hatch type. Completely done over 1924. Excellent condition. Scripps F4, absolutely new. Salt water equipment. 20 m. p. h. \$1,500. Alexandria Bay, N. Y. C. R. C., Mr. C. A. Herrick, Girard College, Phila, Pa.

Wanted—Used V Bottom Runabout Hull only. 32 to 40 ft. long, suitable for Fiat 300 installation. Send complete specifications and photographs to Wm. Webber, 1582 Arthur Ave., Lakewood, Ohio.

Wanted—Position on yacht by licensed master, thoroughly experienced, best references, familiar both sail and steam. Address, Master c/o MoToR Boating.

18 H.P. 3 cylinder Automatic, condition good, \$200. 24 H.P., 3 cylinder, 4 cycle heavy duty Lathrop, overhauled, \$400. 24 H.P., 4 cylinder speedway as is, \$200. 18 H.P., 4 cylinder Murray Tregurtha as is, \$200. 27 H.P., 3 cylinder Wolverine as is, \$300. 32-37 H.P., 4 cylinder Standard, condition good, \$400. 60 H.P. 4 cylinder heavy duty Craig, condition good, \$500 complete. 65-75 H.P., 4 cylinder heavy duty Standard, \$500 as is. 75 H.P., 6 cylinder heavy duty automatic, as is, \$500. 60 H.P., 4 cylinder medium duty Speedway, overhauled, condition very good, \$650. 110-150 H.P., 6 cylinder high speed Model M Van Blerck with electric starters, motor overhauled and in very fine condition, \$600. Pair left and right hand 200 H.P. 8 cylinder model M. high speed speedway motors with electric starters. Motors overhauled and in very fine condition. Edward Keil, 157th street, North River, New York.

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The rapid growth of our marine engine business has forced us to move to larger quarters, with more display space for our increased line of boats and engines, and bigger shop facilities. The location is also much more convenient for our patrons than the former store at 229 North State Street because they found it difficult to park their cars in the Loop.

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STORAGE-REPAIRS-MARINE RAILWAY

Carl Fisher Buys New Boat

Word has been received that Carl G. Fisher of New York and Miami, has purchased from W. K. Vanderbilt, the 150-foot steel yacht Eagle. This boat is fitted with a triple expansion steam engine and was originally built in England. The hull is substantially constructed, and it is Mr. Fisher's intention to use the craft for extended cruises in off shore waters.

Bruns Kimball Move

The large quarters occupied by Bruns Kimball & Company in New York having grown too small to carry their large stocks of used and rebuilt marine engines, has made it necessary for them to seek still larger quarters. They have relocated their business at 50-54 West 17th Street, New York, N. Y., between Fifth and Sixth Avenues, and now have probably the largest retail show room displaying exclusively marine engines in the country. They will be able to properly display their full line of new engines which include Sterling, Kermath, Frisbie, Wolverine, Doman, Niagara Special, and Missouri Oil, as well as their large stocks of used and rebuilt engines.

New Schooner Building

The Reed-Cook Construction Company of Boothbay Harbor, Me., are now building an attractive little schooner, called Night Hawk from plans by William H. Hand, Jr., of New Bedford. This boat is typical of Mr. Hand's work, but is of slightly less draft than usual, and arranged in a different way. The construction is very sturdy and there is fitted an outboard keel weighing about 5,000 pounds. A live fish well is installed to enable some fish and bait to be kept alive if desired. The sail spread is moderate, but sufficient for cruising conditions. In addition a medium duty W-S-M engine is installed which delivers about 30 h.p. and will give the boat a speed of from 7½ to 8 miles under power. She is equipped with electric lights throughout, and the battery equipment will be kept properly charged by means of a little Homelite generating plant.

An Anti-Fouling Paint

A product which has been on the market for many years, and which is favorably known wherever fast and well kept yachts are found is the Marblehead anti-fouling green bottom composition, made by the Stearns-McKay Manufacturing Company. The powerful protective properties of this material insure that the underbody will

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remain clean of marine growth and barnacles, and be protected against borers. This material is used throughout the world and has given excellent satisfaction on both Pacific and Florida coasts. It has helped the speed of boats as was shown in some of the recent races in Florida.

Marblehead green is equally serviceable on steel or wood bottoms, as it is not a copper paint, and has no corrosive action on metal in salt water. It has a wonderfully slippery finish, and a long life. A test made not long ago on a large cruising yacht was interesting. The bottom was painted in sections with different kinds of bottom paints, and after eight months in the south, some five months of which was spent at anchor in a southern port, where marine growth and teredo destruction are particularly severe, reported that the parts protected by Marblehead green were in better condition and practically free from marine growth of every kind.

A Gasoline Gage

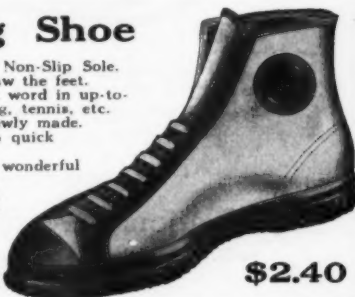
One of the most annoying troubles of a boatman is the problem of how much fuel remains in the tanks after a long run. Frequently the fuel used during any one trip runs higher than was thought, and the next time the boat is to be used the tanks are found practically dry. A little device which will enable the yachtmen to tell from his steering wheel position just how much fuel is in the tanks, is the R-K-D Gas Gage, which is designed to be installed in a tank, and give a reading at a distant point. Not alone will the use of this prevent the tanks from running dry at inconvenient times, but also it will enable the operator to keep a close check on his fuel consumption by informing him of the hourly drain on the tanks. The R-K-D gage is named from the Reiter-King-Dugan Co., Akron, Ohio, the makers, and they will be glad to send a circular to you.

Summer Outing Shoe

White and Brown duck with pure rubber Non-Slip Sole. Hard felt innersole that will not curl or draw the feet. This new style Lace-to-toe shoe is the last word in up-to-date shoe construction for boating, camping, tennis, etc. As rubber deteriorates rapidly get shoes newly made. With 35,000 customers, our turnover is so quick shoes do not get old.

Send for catalogue and free sample of this wonderful sole, also duck and felt innersole. Price: Men's Brown or White, \$2.40. Boys', White only, \$2.20. Delivered free in the U. S.

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FREEPORT MAINE



\$2.40



"Francis A. V" Semi-Houseboat Cruiser, Elgin Equipped and Built by the Matthews Co., Port Clinton, Ohio

Chart Your Cruise

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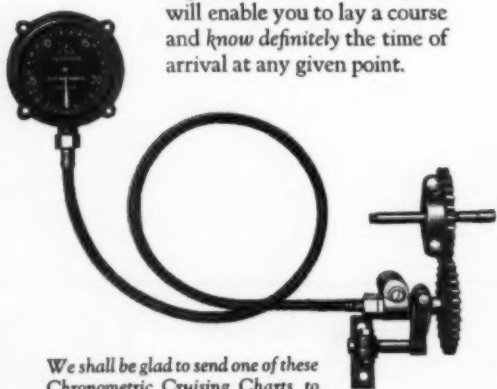
ELGIN Tachometers represent a service that no motor boat owner would ever attempt to reckon in mere dollars and cents.

Simply as an instrument of rare precision and accuracy, the Elgin you install in your boat will be worth many times its cost to you in the increased efficiency of your motor. But that is not all:

As an accurate index of the R.P.M.'s—as a positive check on all that your motor DOES, should do, or can be made to do, in power and speed, your Elgin becomes a treasure of almost priceless value.

Don't guess. Own an Elgin and know.

In accord with the policy of rendering real service to the motor boat enthusiasts of America, we are now prepared to furnish a dependable Chronometric Chart to every motor boat owner, with our compliments. When used in conjunction with the Elgin Tachometer, this Chart will enable you to lay a course and know definitely the time of arrival at any given point.



We shall be glad to send one of these Chronometric Cruising Charts to motor boat owners without cost, upon request. Address

TACHOMETER DIVISION

Elgin National Watch Company

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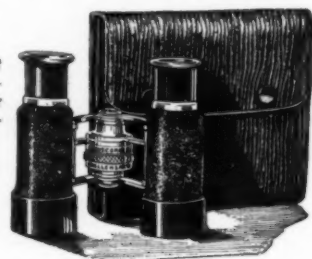
Yard & Shop (Continued from page 65) A New Glass

Our readers are undoubtedly familiar to a certain extent with the little Biascope pocket binocular which has been on the market for the past year. This original glass met with such instant popularity that thousands have been sold not only in this country but in all parts of the civilized world.

The manufacturers now announce a new improved Biascope. It will have all of the advantages and conveniences of the original glass, plus an adjustable pupillary distance which will make the instrument fit all eyes. This feature is a decided advantage generally found only on instruments of much higher price and it is needless to say that this added advantage will undoubtedly increase to an even greater extent the popularity which these instruments enjoy.

Every boatman and lover of the great outdoors should own a good glass and we know that you would like the Biascope because of its compactness, light weight, handsome durable finish, magnifying power of six diameters and the exceptionally reasonable prices at which they are available.

The Wollensak Optical Company of Rochester, N. Y., who make this little glass, will gladly send descriptive circulars to anyone interested.



The little Biascope pocket binocular, 6 power magnification, made by the Wollensak Optical Company, Rochester, N. Y.

Economical Cruising

To enjoy a thousand mile cruise you don't require a large pleasure craft of 75-feet or more, with cabins and decks, and a couple of powerful 8 cylinder motors, according to two adventurous Canadian youths who made a summer cruise of over nine hundred miles in a 16-foot boat powered by a 2 h.p. one cylinder Evinrude motor.

The two brothers, who made this trip, were N. and J. H. Charbonneau, of Montreal, Canada, sons of the late Judge Charbonneau who was a great boat enthusiast, and brought up his sons to enjoy the water as much as he did.

Early on the morning of June 24, the two lads started from Montreal down the St. Lawrence River, arriving at Sorel at seven P.M. Their first day's travel was so enjoyable that they decided to continue on down the river. They faced stormy Lake St. Peter which treated them very decently and they landed for the night just above Three Rivers, at Notre Dame Du Lac. On the next day, passing Three Rivers, they motored along between the high coasts of the Platon and Lotbiniere, their speed being increased by the fast current of the Richelieu Rapids. After a siege of rainy weather they arrived in Quebec having made a run of 200 miles in seven days, on seven gallons of gasoline. The next day, leaving behind the enormous cape and the Island of Orleans, they were thrown in what might be called open sea for a small boat. That night they landed on one of the seven islands, called Isle aux Grues. After continuing to about four or five miles from Murray Bay they decided to return because of a rather violent storm which they encountered. The return trip from Murray Bay to Sorel was made in seven days. After a little rest, they went ahead in the pretty Richelieu River, stopping at St. Our, St. Dennis, Beloeil and St. John. After camping at Isle aux Noix, they landed at Rouses Point at the head of Lake Champlain. From there they returned to Sorel, having made 180 miles in about fifteen days. After returning to Montreal they decided to go higher in the Ottawa River, and so they passed again into the Grenville Canal and motored through Lake St. Louis, the Lake of the Two Mountains, and into the Ottawa River.

In their eight weeks' cruise they traveled almost 1000 miles, having reached salt water below the St. Lawrence at Murray Bay, having been in the United States at Rouses Point, and on Lake Champlain, having been in the Province of Ontario at Hawkesbury and having visited many points of interest in their own province. Although they encountered considerable rough going and some stormy weather, they were in no case delayed by any mechanical defects in the sturdy Evinrude motor which powered them over this 1000-mile cruise.



LATEST TYPE 30 ft. SEA SLED

45 miles per hour with a pair of LM-6

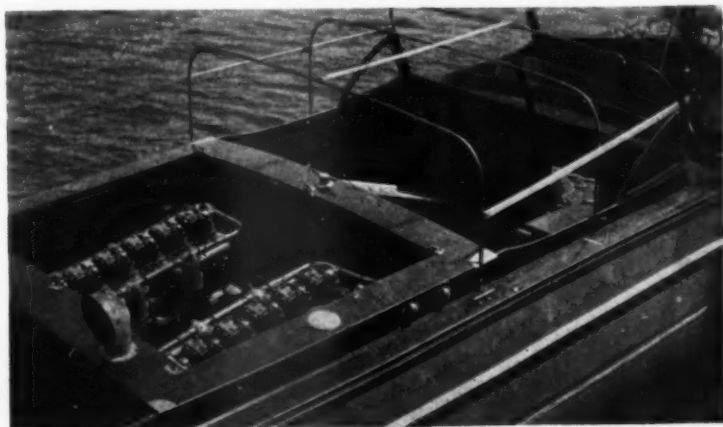
HALL-SCOTT

Marine Engines

HALL-SCOTT powered Sea Sleds have long been famous for their speed and reliability, affording a practical means of marine transportation at 35 to 45 miles an hour, not merely for short runs and speed brushes but for continuous service, hour after hour. Distance is annihilated by such a boat, a two hour run covering the same mileage as a full day's journey in an ordinary boat.

The latest mile-eater is the new type 30 ft. x 7 ft. 6 in. Sea Sled, powered with a twin screw installation of six cylinder 200 H. P. Hall-Scott Marine Engines. Built for Joseph F. Knapp for use as a fast ferry between his home at Mastic, L. I., and his New York Office. This boat will carry ten to fifteen passengers at the rate of 45 statute miles per hour which is practically double the passenger capacity and double the speed of the average 30 ft. speed runabout.

Hall-Scott Marine Engines are built for just such boats where the demand is not only for maximum speed and power with very light weight but also for the dependability that makes a fast boat more than a novelty.



Engine compartment with hatches removed showing twin LM-6 Hall-Scott Marine Engines.

Write for literature and prices

LM Series. Bore 5" Stroke 7"
4 Cylinders, 125 H.P. 1175 lbs.
6 Cylinders, 200 H.P. 1400 lbs.

HSM Series. Bore 4 1/4" Stroke 5 1/2"
4 Cylinders, 50-70 H.P. 1275 lbs.
6 Cylinders, 75-100 H.P. 1525 lbs.

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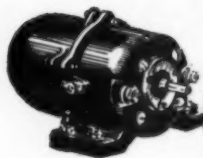
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As a reliable instrument to tell speed in "Knots or R.P.M.," this Weston Electric Speed Indicator leads the field. For dependable speed measurements for either Merchant Marine or Pleasure Craft, it is unexcelled. Now offered as a result of many years of experimental investigation. Time tests of more than three years' duration absolutely guarantee its reliability. Invaluable for horsepower tests upon motors or engines. Used by individual racing enthusiasts as well as by marine engineers and builders of marine engines.

Bulletin 3004 contains full information. Sent promptly on request.

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Electrical Indicating Instrument Authorities Since 1888

STANDARD-The World Over

SPECIAL CLEARANCE



Brand new Dome Lights, brass nickel plated, four-inch over all, frosted lens complete with 4 C. P. double contact, 6 volt bulb. Can be screwed to cabin sides or ceiling. Price \$1.00 each, \$10.00 dozen. Discount to the trade on substantial quantities.

Celebrated Mosler Vesuvius Mica Spark Plugs \$1.50 and \$2.00 grades, $\frac{3}{8}$ " standard, $\frac{1}{2}$ " long, $\frac{3}{4}$ " standard, $\frac{3}{4}$ " long. Price 50c each. Discount on lots of 100.

Electric starters, generators, starter switches, ammeters, magnetos, etc. at less than original manufacturing cost. All goods guaranteed brand new and in perfect condition.

GENERAL SALES CO.

1919 South Michigan Ave.

Chicago, Ill.

Fuel Economy with Low Grade Fuel

(Continued from page 40)

who design our engines to operate properly on this fuel. The gasoline contains a sufficient quantity of low boiling point fractions to make starting easy and the percentage of inter-

mediate and high boiling point fractions is so proportioned that the fuel, properly vaporized, enters the combustion chamber as a finely divided mist or fog; in which condition, combustion is rapid and complete. This fuel compounded for a given purpose as defined by mechanical engineers, will give satisfactory results in the economical operation of a motor designed to operate on it.

A point, often misunderstood, is the relative efficiency of high and low density gasolines. It is a common opinion among gasoline users, that a fuel of low specific gravity (high Baume test) is more efficient, in that they can get more miles per gallon with their engine. That is not true, if the motor and its equipment are designed for the fuel used. What is commonly called low grade gasoline by the user is just as high grade a product as the old 74 degree stove gasoline, and your modern motor will develop more power with this compounded fuel than it will with the old 74 degree straight distilled gasoline, which was practically a byproduct in the production of kerosene until the perfection of the gasoline engine.

The motor will have a hot spot manifold as short as is possible and without pockets or sharp turns to throw the heavier particles of the vapor or mist out of suspension. A hot water or exhaust gas jacketed carbureter which is designed for just this fuel, in order to assure the various fractions being properly suspended in the air. In addition to this an arrangement is provided for heating the air before it is drawn into the carbureter. This motor operates at a temperature which keeps the discharge water from the jackets at a temperature just below the boiling point.

Any old motor will operate on 74 degree gasoline; but it is not readily obtained. If the old motor is to still operate it must be altered in itself or its equipment so that the heavier fuels can be used. The addition of a hot air intake will help to vaporize and finely divide the fuel so that it can be more readily carried along by the air, and a hot jacketed carbureter will still further assist in the mixing and maintaining of the mixture. However, the warmer the air the less weight of fuel it will carry in suspension.

After we get the fuel properly suspended in the air it is still a problem to keep it there with the intake manifold of years ago. Perhaps you can recall seeing 12 or 14 inches of brass pipe and right angle elbows coupled up for an intake manifold which extended to the base of the motor. High test gasoline formed practically a permanent mixture but the mixture from the present day gasoline is by no means permanent. It would condense and run down the manifold and throw out at the turns. Hot jacketing this pipe would help but the fitting of a modern carbureter with the elimination of the vertical pipe in connection with hot jacketing the exposed manifold will produce about all results that are possible with the motor. On a multi-cylinder engine the carbureter should be so arranged that the butterfly throttle valve, when partially closed, deflects the mixture to the top rather than to one side. This prevents a rich mixture to one set of cylinders and starving the others.

The intake manifold designed with easy curves and counter curves to equalize the throw out and reduce the centrifugal force which causes the throw out, is important. The minute particles which are thrown out condense on the manifold or are carried along that side to the nearest cylinder which consequently gets a richer mixture unless corrected by a counter curve. The hot spot manifold can not be readily adapted to motors not so designed but in some cases it is possible to fit a new manifold or hot jacket to the old one to prevent condensation.

Several motors of modern design are built to operate on kerosene or distillate as well as gasoline, but except where gasoline is hard to obtain the use of other fuels is not advisable on pleasure boats.

Most marine motors are operated at a temperature far too low for economical operation. Many operators are scared if they can not hold their hand on the cylinders at any time, but so long as steam does not form in the jackets no harm will result from the temperature and less fuel will be required as there will be less heat loss. A motor-meter fitted to a tee in the discharge close to the motor, or a distance type meter, will indicate the temperature; and the regulation may be accomplished by by-passing some of the hot water back to the intake, controlling the flow by a valve in the line and the sea cock. A large volume of hot or warm water circulated rapidly will maintain a more even temperature in the jackets than a smaller quantity of cold water.

Advertising Index will be found on page 136



Cheer with the Galleries When the Delegates March In!



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Radiola Super-Heterodyne

is the great Radiola for the big events of summer broadcasting. Listen in, on board, to the conventions and the ball games. Take it everywhere. It needs NO ANTENNA—no ground—no connections of any kind. Has a handle to lift it by. Tunes in with just two knobs that you turn to marked spots on the dials. Tunes out powerful near stations to get the far ones. A wonderful new achievement in the perfection of its tone—its sensitivity—and its supreme selectivity!

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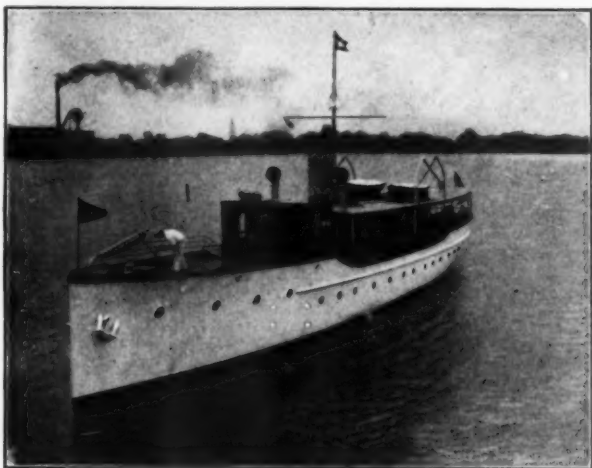
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XUM



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**"Step on the button—
up comes the anchor"**

Fuel Economy with Low Grade Fuel

(Continued from page 68)

Of course a motor must be in good mechanical condition to secure economical operation. Be sure that the carbureter is suitable and properly adjusted, fitted with a hot air intake or hot jacketed or both, and closely adjusted. Keep free from carbon and so adjust the flow of cooling water that the discharge is just a few degrees below the boiling point. Run with the spark well advanced as much as you can, controlling the speed by throttling. A retarded spark slows the motor but uses only part of the stroke and, therefore, only part of the fuel burned.

The spark should be a fat one. Combustion is not instantaneous and the faster the mixture is ignited the faster it burns and the less the fuel required. There is a high tension transformer device on the market that about doubles the volume of the spark, thus improving the operation of the motor and lowering the fuel consumption.

An auxiliary air valve in the manifold, which is opened at speed will decrease fuel consumption slightly, but the air admitted should be warm so as to not precipitate any of the foggy mixture. There are devices for this purpose on the market, or a check valve and pet cock will answer.

At a speed of from 15% to 20% below full speed the motor will be more economical in fuel than at full speed and wear on the motor will be less.

The design of the motor and the compounding of the fuel is engineer's work, but by looking closely to the details of installation, equipment, and operation, the efficiency of any engine, operating on any fuel can be increased.

W. B. M., Newburgh, N. Y.

Water Vapor Stops Carbon

LOWER grades of fuel can be successfully used in the average marine motor by the addition of special arrangements to insure the proper vaporization of the heavier oils and to avoid pre-ignition knocks due to incandescent carbon deposits in the combustion chamber. There are more B. T. U.'s in a given quantity of kerosene than in the same quantity of gasoline.

The explosion of a mixture of kerosene and air is hotter, therefore, than that of a mixture of gasoline and air under similar conditions, and as the former is more prone to produce carbon deposits, premature firing of the incoming charge by incandescent carbon is a very common fault.

A successful method of overcoming carbon knocks or pre-ignition is to introduce steam or water vapor into the carbureter air intake along with the air. The action is a chemical one. In the explosion of the mixture, the water (H₂O) is decomposed into hydrogen and oxygen gases. The free oxygen attacks any carbon particles present, thereby reducing and even preventing the formation of carbon. It also tends to produce more perfect combustion of the kerosene and air mixture, thereby adding to the force of the explosion. This method of adding water vapor to the incoming charge is not only useful in kerosene burning motors, but will be found to be a great help in keeping down carbon in gasoline motors. One four-cylinder motor I know of, was run with this water vapor method on gasoline for five years and when taken down, not more than a couple teaspoonsfull of carbon could be scraped from all cylinders.

To provide for the proper vaporization of kerosene or similar oils an arrangement like that shown in the drawing may be used. A galvanized iron jacket or sleeve about one inch larger in diameter than the exhaust pipe is fitted around the latter. This sleeve for using kerosene should be at least thirty inches long and may be fitted to a horizontal run of exhaust pipe as well as on an inclined section. Galvanized iron or cast iron ends are riveted in place, which in turn are bored to fit snugly on the exhaust line.

On one end of this jacket a sheet metal outlet is riveted as shown in the sketch which is connected to the carbureter air inlet with flexible metallic tubing. On the other end an opening is cut in the top for the admission of air. Thus it will be seen, the carbureter draws heated air which is necessary for the proper vaporization of the kerosene. If the cooling water from the motor is piped into the exhaust line it should enter at a point beyond this sleeve or jacket to insure the maximum heat being given to the air passing through the latter.

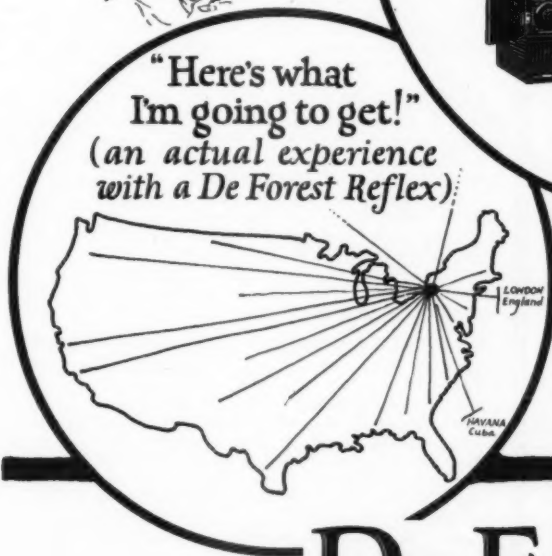
To provide the steam or water vapor in the mixture, mount a water tank of about one gallon capacity near the air inlet opening in the sleeve. This tank has a 1/4-inch brass pipe at the bottom, a shut-off cock and a brass needle valve. The needle valve is arranged to drip through the opening in the

(Continued on page 72)

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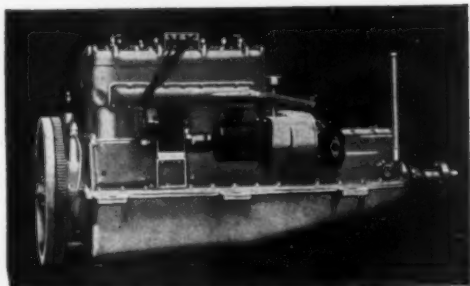
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- Sixth**—Large handholes give easy access to connecting rod bearings for adjustment.
- Seventh**—Detachable cylinder head without overhead water pipes.
- Eight**—Liberal water pump, easily cleaned.
- Ninth**—Double row ball bearing takes all propeller thrust; also ball thrust bearings on camshaft and oil pump; two annular ball bearings on instrument shaft.
- Tenth**—Finest main and connecting rod bearings money can buy; burnished to practically 100% bearing surface without scraping.

These are just a few of the outstanding features of the Kermath 35 and 50—a combination of fine points not equalled in any other marine engine of any size or price. Come to our showrooms and let us show you these and other details. Not merely selling features but valuable service features.

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Water Vapor Stops Carbon

(Continued from page 70)

jacket and strike the hot exhaust pipe, producing steam, which is drawn along with the intruding air.

The rate of flow of this water can be best gotten by trial and once set, the needle valve need not be touched as the plug cock should be used to stop and start the water drip. A drain hole should be provided in the lower side of the jacket so that the water will not accumulate in the jacket if it is left dripping while the motor is idle.

In boats operating in fresh water only, the tank may be dispensed with and the water drawn from the overflow of the cooling system. This is not practical, however, with salt water.

Heating the incoming air and adding water vapor will also economize the use of gasoline in marine motors, but the heating should be to a lesser degree. In other words, a much shorter jacket should be used, as heating the incoming air over a certain point cuts down the power of air.

Of course it is necessary to start up on gasoline and switch over to kerosene after the motor has warmed up. For this purpose two tanks are necessary and a feed pipe and cock arrangement as shown in drawing will be necessary.

W. E. M., Philadelphia, Pa.

Steam-Bending Frames

(Continued from page 41)

fasten a substantial handle to the outside. Before nailing on the bottom board of the box, fasten on several cleats for the steaming lumber to rest on.

The amount of steam and length of time to leave the lumber in the box depends upon the size and nature of the material. Upon removing, if it does not bend readily, replace and steam longer, but work quickly when once starting to bend, for this must be done before the lumber cools. One essential point is always to give the piece more bend than actually required, for steam bent lumber always straightens out a little when cool. If bent too much when cold, it can be straightened without damage, but can never be given more curvature. If not straight grained, a bent frame will often split on the outside of the bend; to prevent this, obtain a length of strap iron about the length and width of the frame, not any narrower, and quickly clamp this to the outside as the frame is removed from the steam-box. Bend this strap with the frame and the splitting of the wood will be avoided. Before bending, draw the required curve on the floor, then nail cleats around the inside, remembering to place these so that more than the needed curvature will be given; bend the frame around these and clamp or hold by another outside cleat until cold.

Planking, especially the garboard streak, frequently requires steam bending; after steaming, clamp one end in a vise and clamp a wood lever to the other end, then twist, always to more than the needed amount, and hold in position until cold.

H. H. P., Los Gatos, Calif.

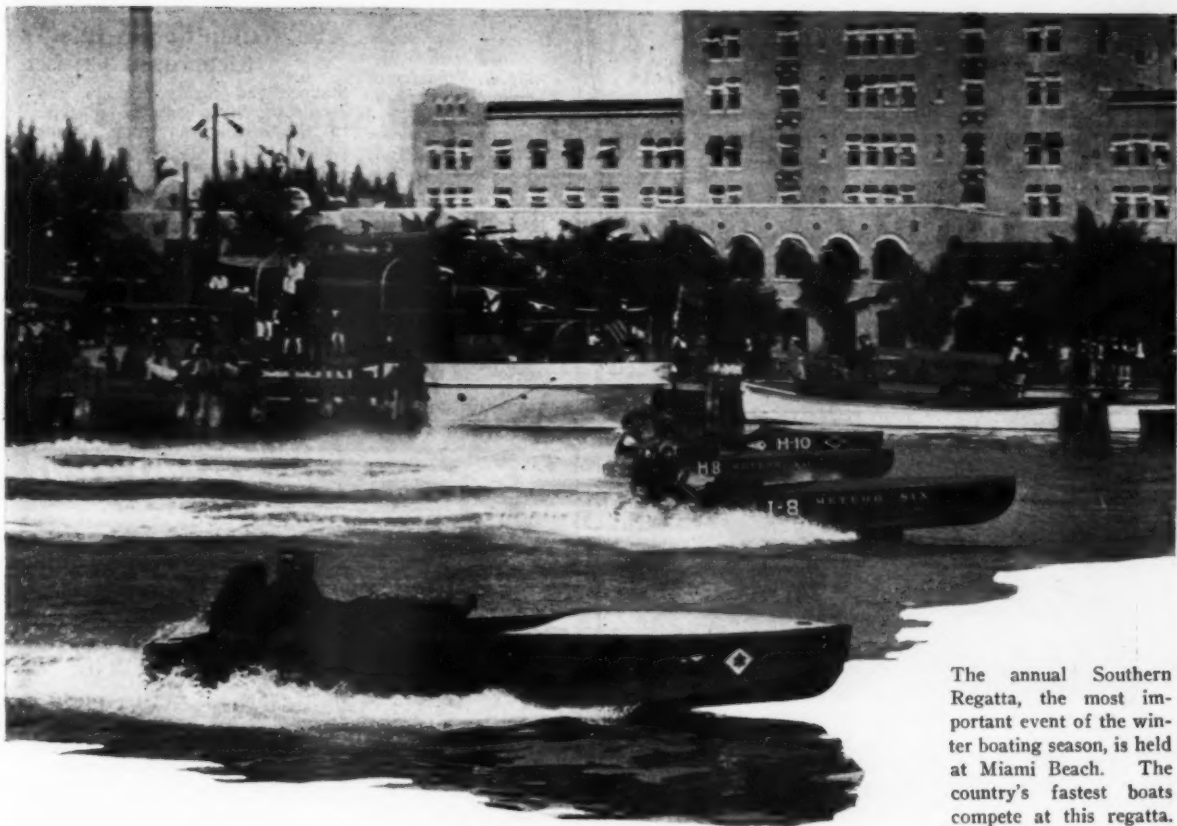
Coast Guard Fleet Progressing Fast

(Continued from page 31)

spares over a considerable period.

At this time, also, C. G. engineers were inspecting two high powered Thornycroft motorboats at the Norfolk Navy Yard, with a view to adding them to the fleet to start immediate operations. These craft, making forty knots speed are of the type used by the British in the early motor boat patrol years of the war, it is understood, and should more than match the fastest rum boats for agility and seaworthiness.

Under the contracts the engines were to be delivered, starting in two months from times of awards, deliveries to be completed within five months, by which time, it is hoped, the hulls will be ready for them. Long before then, possibly, the first of the fleet will take the water. As the boats are delivered and found satisfactory they are to be shot out to patrol points where liquor and other contraband running is the worst. In the meantime, the Coast Guard intends to keep secret the number in operation, and the points where they are working. Especially will this hold with the speedy destroyers, and the latter will be moved about from point to point as the enemy concentrates his forces. Then, when the fleet is complete a certain number of units will be more or less permanently stationed at the worst points of entry, and Mr. Bootlegger will be told just how strong a welcoming committee awaits his advent.



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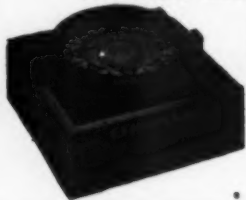
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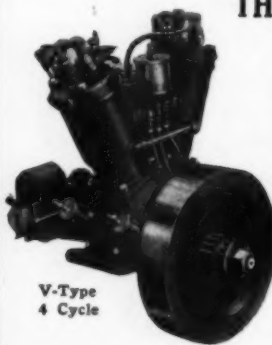
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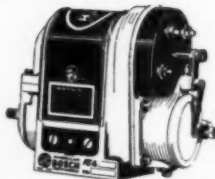
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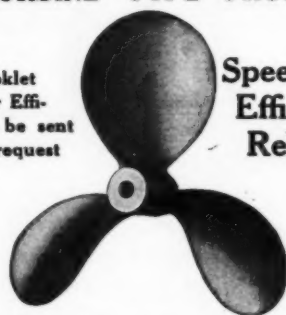
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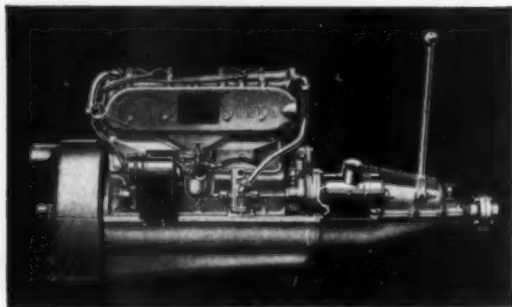
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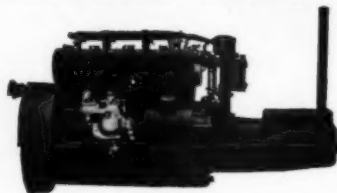
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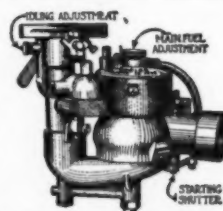
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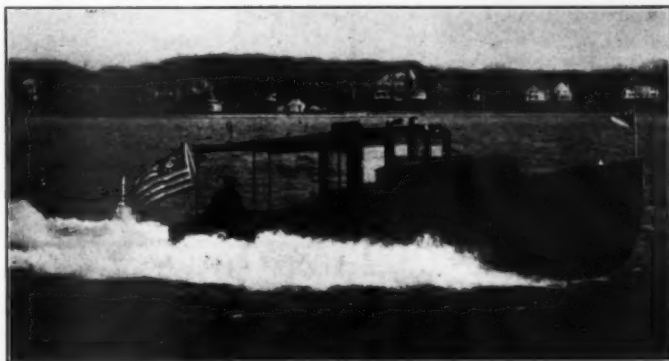
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50 H. P.
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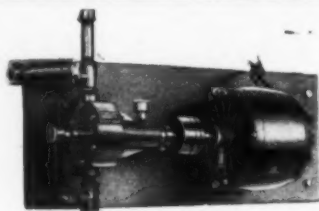
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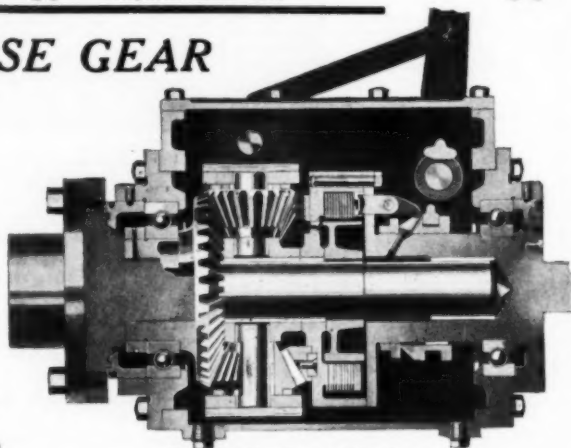
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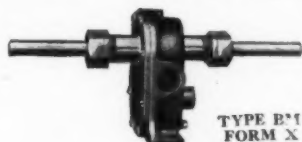
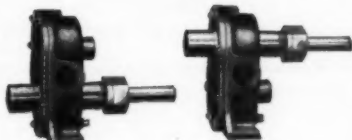
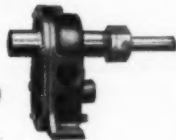
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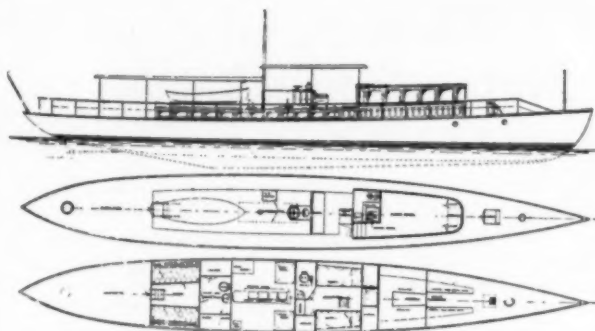
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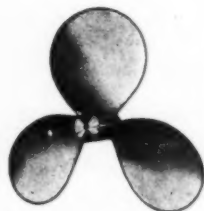
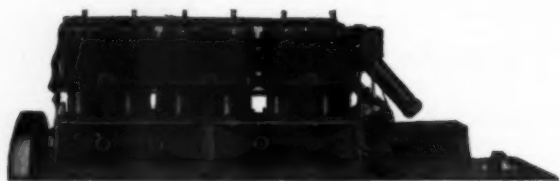
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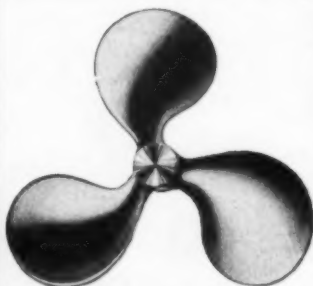
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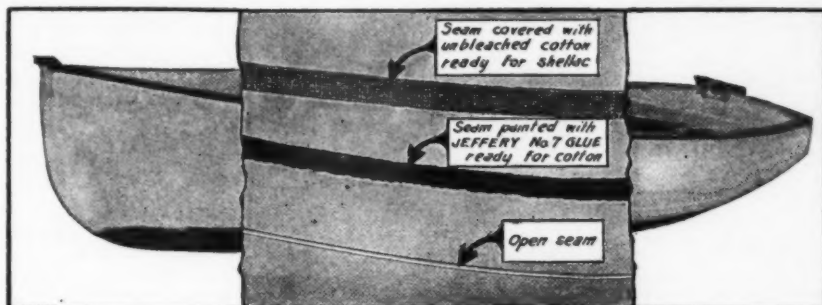
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The enlarged section of the above illustration shows how the hull seams of a boat can be treated when the owner does not care to go to the expense of covering the entire hull with cotton or canvas as recommended in our booklet entitled "How to make your boat leakproof."

The lower seam is shown open, as usually is the case when a boat is laid up during the winter, the middle seam is shown painted with a coat of our Jeffery's No. 7 Marine Glue ready for the cotton fabric which is laid on the glue and ironed into it with a warm flat iron as shown on the top seam. The cotton is then given a coat of shellac and painted. When the job is completed according to these directions the patching strips can scarcely be detected.

We however believe and earnestly recommend that if a more permanent result is desired, the entire surface be covered with a fabric, laid in our Jeffery's No. 7 Black soft quality Marine Glue. This treatment will insure a boat with a coat of paint once a year being absolutely watertight indefinitely.

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In all the various grades

For Sale by all Yacht, Boat and Canoe Supply Houses, Hardware, Paint and Oil and Sporting Goods Dealers.

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(See our ad on Page 140)

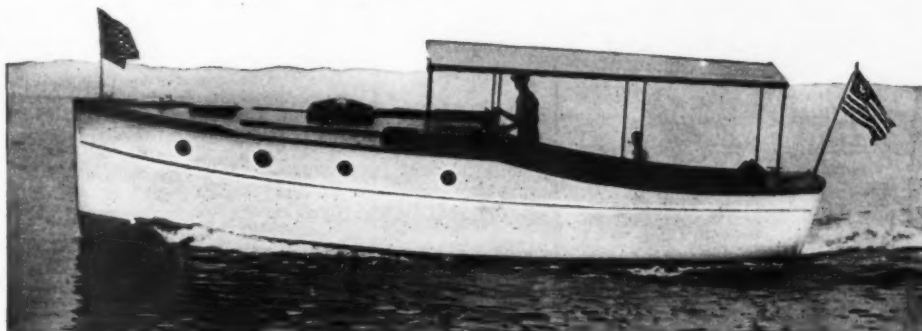
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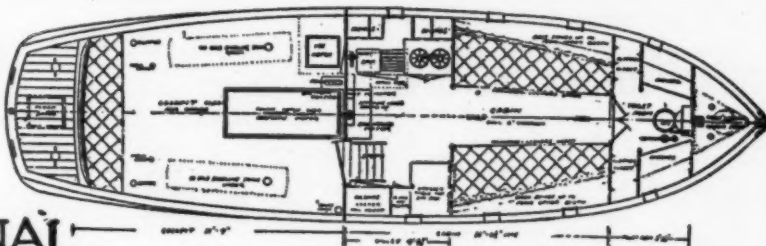
**PRICES**

\$3950 with Kermath 20 H.P. En-
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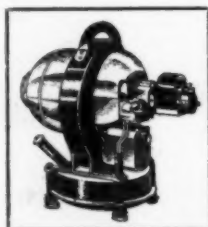
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Colonel Jesse G. Vincent

(Continued from page 17)

and on May 27, 1917, he went to Washington to finish the engineering plans he had started. Out of these plans came the Liberty motor and Vincent was then requested by the government to resign from the Packard and accept a commission so that he might follow up important engineering work in connection with aircraft.

On August 15, that same year, he was commissioned a major in the signal corps. He accepted that official capacity on Sept. 4, after having given his resignation to the Packard company, and was immediately assigned to the Equipment Division and placed in charge of the Engine Design Section. He proceeded to Dayton, O., under special order, dated October 17, 1917, and began building an experimental aircraft engineering station at McCook field. He was placed in full charge of the airplane engineering department at Dayton, and in command of McCook field, Feb. 6, 1918, and the following day was promoted to the grade of Lieutenant-Colonel.

On August 8 he became a reserve military aviator and a little more than a month later—the date was Sept. 13—he acquired the title of Chief of Engineering for the Airplane Engineering Division of the Bureau of Aircraft Production. Under a special order, dated Nov. 5, 1918, he was detailed as a member of the Joint Army and Navy Technical Aircraft Board. This was a few days before the ending of the war and directly after the cessation of hostilities Colonel Vincent applied for his discharge and got it on November 30.

He returned to his job at the Packard.

There, in a few paragraphs, you have the high spots to Vincent's life history.

He is a self-made engineer and he is one of those men who play as hard as they work. During the past two or three years he has become a motor boat enthusiast and while riding the crest of the first wave of that enthusiasm he captured the Gold Cup in 1922 with Packard Chriscraft. With the same boat he repeated as a winner in 1923.

In the Gold Cup regatta of 1923, Colonel Vincent had five boats entered, two in the Gold Cup race, and three in the \$25,000 International Sweepstakes race. He drew down second and third places in the Sweepstakes race. All five of his racing boats were tuned by Colonel Vincent, personally, and he worked day and night for a week before the race in order to put his boats in the best possible shape.

I met one of his associates a few days ago and, naturally, the conversation turned around to Vincent.

"At racing camps I have worked in the same room with him—parked with him for twenty-four hours at a stretch—and that austere front the Colonel puts up is a fraud," said this man. "He slaps it on to conceal a natural bashfulness. He can do plenty of fancy cussing when the situation warrants. Don't think he can't. He has a keen sense of humor, and a keen desire to have friends.

"He has been so much by himself in his drive, since he was a kid, to make something of himself that he appears, most of the time, as one of those one hundred percent academic college professors who haven't a laugh in their soul. He's not. He can laugh as infectiously as anyone.

"As an engineer, his most valuable asset is his ability to think straight.

"He can look over a design, or a blue print, and take it in at a glance, instantly spotting any weak point. A little incident to illustrate—

"In 1919, the famous Packard 905 racing car, which Ralph De Palma drove at the speed of 149 miles an hour at Daytona, was being built and Colonel Vincent gave it the last inspection before it left the factory for Florida. One of the engineers knew that there was a rivet which had not been headed over. He knew, however, that this very slight imperfection which had nothing to do with making the car weaker, or stronger, structurally was hidden underneath the machine and in an inaccessible spot.

"He said, afterwards, that he believed it would escape even Colonel Vincent's eagle eye.

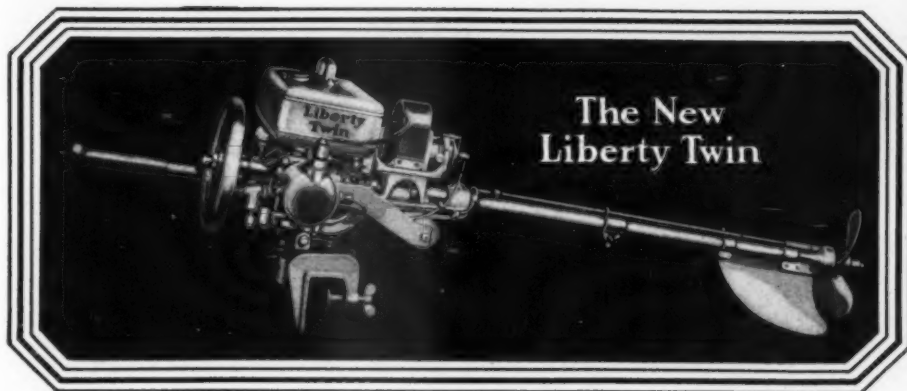
"The Colonel, in making his final inspection, crawled under the machine, grunted, and slid back out.

"There's a bum rivet in there," he snapped. 'Get it out of there.'

"He's a sportsman. Last winter he was visiting some friends at White Plains, N. Y. Near the place where he was stopping there was quite a sizeable hill, covered with an ideal crust for skiing. Vincent had never tried the sport but he wanted to. Strapping on a pair of the runners he made his start.

"He landed at the bottom of the run with legs, arms and skis all mixed up and for about two months thereafter he wore one ankle in a plaster cast and sported a pair of crutches. He refused to accept the solicitations of his friends, passing it off as a joke on himself."

(Continued on page 98)



The New
Liberty Twin

Our Challenge
to other builders to
follow us through
weeds, shallows and
over sunken obstruc-
tions has never been
accepted and still
stands

Handle the Motor That Leading Dealers Sell

The success of leading merchants is based very largely on the careful selection of the products they handle. Wanamaker's of Philadelphia, Macy's of New York, Belknap Hardware Co. of Louisville, Von Lengerke & Antoine of Chicago, Van Camp Hardware & Iron Co. of Indianapolis—all represent outstanding successes in their respective centers. They are careful buyers and select the products they sell only after the most careful investigation of various makes. All of these, and thousands of other highly successful dealers, handle the



They were not slow to recognize its outstanding selling features. They readily appreciated the correctness of the Liberty Direct Drive principle. Tested by thousands of users over a period of four years, it has proven its superiority over all vertical and so-called "tilting" motors. Drives any boat through thickest weeds, shallowest water and over hidden obstructions that would wreck any other motor. And note these additional advantages:

Has Bosch Magneto

Standard the world over on high-class motors. Mounted on a special rocking cradle, designed by Caille and Bosch engineers, it gives a uniformly hot spark at all speeds.

Zenith Carburetor

Specially designed for the Caille Liberty Twin. Operates automatically at all speeds without any adjustment whatever. No needle valves to fool with. Proper mixture of gas is always assured.

Motorcycle Control

Simply turning the grip on the steering handle adjusts the timing of the hot Bosch spark and controls the speed of the motor. Pressing button on end of steering handle stops motor. The easiest operated motor in the world.

Easiest Motor to Carry

The telescoping shaft can be quickly detached to facilitate carrying. Motor comes in chest having convenient handles. Can be shipped anywhere or carried on running board of car.



Easiest Selling
Motor You
Ever Handled



The Single Liberty
Same principle as the Twin
but having only one cyl-
inder. Just the motor for
those wanting a high-grade
engine at a moderate
price.

Handle the Entire Caille Line

Provides a motor to meet every purse and every fancy as regards types. But you'll find the Caille Liberty Twin will be your leader by a wide margin. Good territory is going fast. Hundreds of dealers are accepting the liberal Caille Agency proposition for 1924. Don't delay. Send for discounts and your territory rights now. Use the coupon.

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See our exhibit at the Outdoor Life Exposition, Coliseum, Chicago, May 12th to 17th

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Rowboat Motors

The Caille Perfection Motor Co.
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Gentlemen: Please send me complete details
on your Caille Liberty Twin motor and dealer
discounts.

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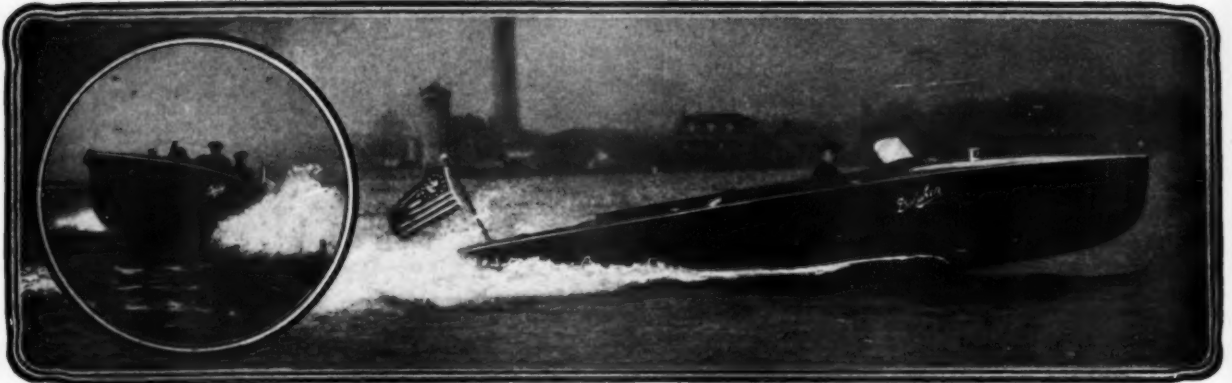
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Have you previously sold
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How many per season?.....

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and the DOLPHIN Special

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Demand for rapid, comfortable, water transportation for small groups, has led to the production of the Dolphin Special, a double cockpit, all mahogany V-bottom, 7-passenger runabout with overall length of 24 ft., beam 6 ft. 1 in. and draft 21 in.

Equal to the very finest automobile, this craft is luxuriously fitted. Mahogany deck, trim and seats, soft padding and springs in the upholstery, covered with a soft blue "muleskin" material and full equipment.

Reasonably priced—including full equipment and tax—only \$3475.

This boat may be also obtained in a six passenger model, 23 ft. in length, and Kermath 50 H. P. motored, for \$3175—tax and full equipment of course.

In close harmony with the aristocratic character of this boat, is its Kermath 50 H. P. marine motor—the leader of its class.

Clean and compact, this motor has all the most advanced features of automotive design.

Made by Kermath, materials of construction and character of design are in conformity with acknowledged leadership.

A five bearing crankshaft—with 11 $\frac{3}{4}$ in. total bearing length—a five bearing camshaft and all other motor elements in the same strength relationship make this motor well able to stand the strain of continuous op-

eration at full load. Force feed lubrication through drilled crankshaft to all rotating motor bearings, insures positive, uniform circulation of oil. Oil is fed to crankshaft through five openings, one in each bearing, giving a construction just five times as safe as ordinary construction.

Camshaft operates submerged in a bath of oil.

New water circulating system is an exclusive Kermath feature. Five openings place cold water at each and every part of the cylinder block—cools the motor evenly.

A simple but extremely efficient manifold is another new development. There are no bends, but a direct inlet and outlet for gases. Propeller shaft and instrument shaft run on double row annular ball bearings.

This motor weighs 700 pounds—of aluminum construction. It operates at speeds from 1000 to 1500 R. P. M.

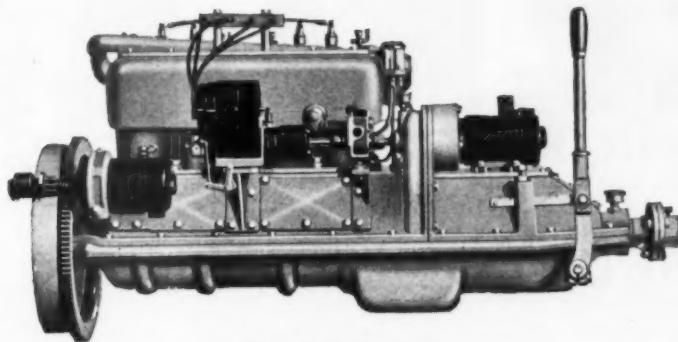
Such a motor could only be built at a reasonable price by Kermath, which won the leadership of the marine motor field in early days and has steadily strengthened its position as a quantity manufacturer of quality motors.

The additional information you desire about either boat or engine, will be gladly furnished by Kermath.

KERMATH M'f'g Co.

DETROIT 5879 Commonwealth Ave. MICHIGAN.

Advertising Index will be found on page 136



The Vanadium 20

*Develops 20 H.P. Bore 4 inches. Stroke 4 inches.
Compression, 65 lbs. Weight 535 lbs. Constructed of
absolutely the best materials we can get.*

The Kermath Vanadium 20—the Standard for years among critical buyers

IN a thousand different ways—under a thousand varying circumstances it has been clearly demonstrated that the Vanadium 20 is superior, for the moderate power plant of average use, from the standpoint of economy, power and general efficiency.

Kermath each year since has not only kept up with the advancements in marine motor design but has established a reputation of being well in the lead.

Thorough dependability is built into every unit of this motor. Chrome-nickel steel crankshaft and connecting-rods—the toughest and strongest material there is. Our own alloy in the camshaft. Selected cylinder castings of good, close-grained, gray iron.

All parts are sturdy—designed and built oversize to stand the continual strain of running under constant full load.

Valves are large, offering gases free entrance and egress. Valve gear sturdy—to resist continual work.

Crankshaft, camshaft, timing gears and other motor elements designed and constructed to the same highest standards.

No Kermath has ever worn out. Last year only \$1.68 worth of repair parts was bought for each motor Kermath has ever manufactured in over 13 years.

These facts, together with the remarkable operating economy, has led 80% of the good boat builders to use Kermaths as standard equipment.

If you want a medium powered engine for a pleasure boat or a commercial craft, you cannot go wrong with a Vanadium 20.

Of course, there are other Kermaths, appropriate for practically every type or size of boat.

More information about Kermath marine engines awaits your request. We of Kermath are power boat enthusiasts and we enjoy answering, to the best of our ability, anything about boats or boat engines.

3 H. P. to 50 H. P.
\$135 to \$1050.

KERMATH MANUFACTURING COMPANY
5879 Commonwealth Ave. Detroit, Mich.

KERMATH

"A Kermath Always Runs"

PEERLESS

HIGH SPEED MOTORS

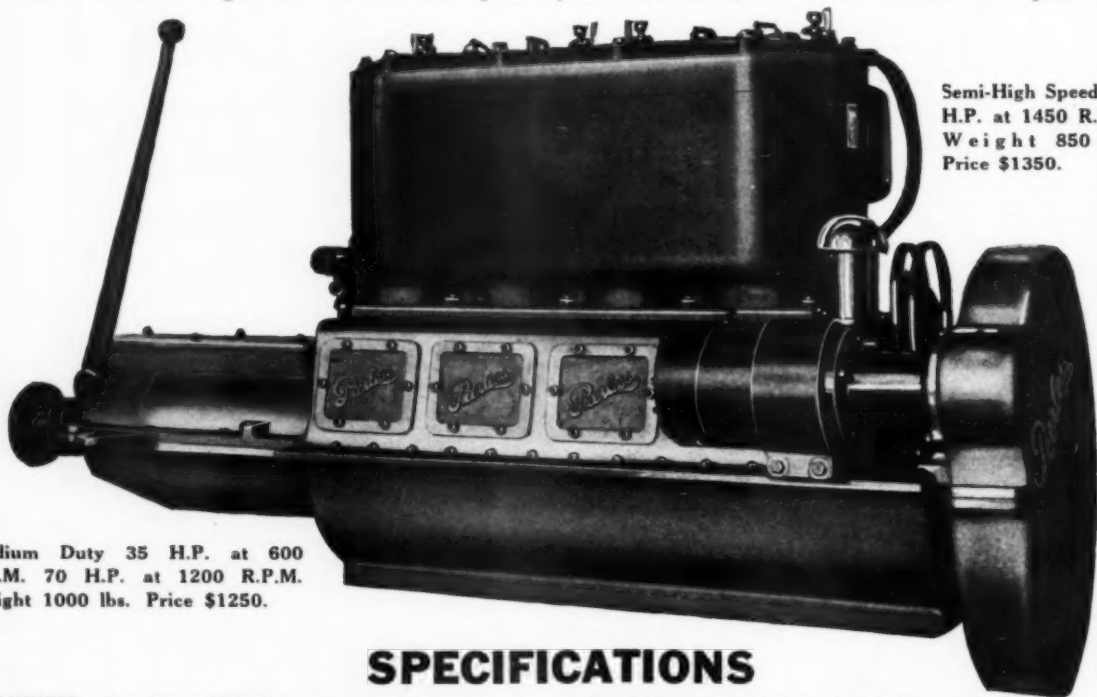
THE PEERLESS line of high speed marine motors, which are in a class by themselves from the standpoint of weight per actual horse power developed, reliable efficient service and price, when considering the fact that nothing but the best of materials and labor and accessories are used throughout their construction.

MEDIUM DUTY MOTORS

The old reliable line of medium duty motors are too well known to need a further description here. They have been giving satisfactory and reliable service in all types of boats for a number of years. They can be had from stock in six sizes, ranging from 5 to 50 H.P.

A NEW MOTOR

The new 35-70 H.P. Peerless motor fills a long felt want in the marine motor field. This motor has sufficient bore and stroke to develop its rated power at engine speed, which is practical in actual boat service. It is absolutely modern in regard to design and equipment, very quiet in operation, flexible in speed control, economical in fuel consumption, and consumes practically no oil, on account of the oil tight base and very efficient full pressure lubricating system. The crank shaft and connecting rods are machined all over, reducing the reciprocating parts to a minimum weight, which results in a perfectly balanced motor, free from vibration at all speeds.



Semi-High Speed 70-
H.P. at 1450 R.P.M.
Weight 850 lbs.
Price \$1350.

Medium Duty 35 H.P. at 600
R.P.M. 70 H.P. at 1200 R.P.M.
Weight 1000 lbs. Price \$1250.

SPECIFICATIONS

CYLINDERS. Cast four enbloc with detachable head, thoroughly water jacketed.

CRANK SHAFT. Six bearing crank shaft, nickel steel, machined all over and bored hollow for lubrication.

LUBRICATION. Full pressure to all working parts; dry sump type, oil supply in separate tank.

CONNECTING RODS. Drop forged nickel steel, machined all over, fitted with removable bronze bushing in upper end, bronze back babbitt lined bearing on crank pin.

VALVES. Medium speed model, fitted with cast iron head valves having carbon steel stem. High speed model, fitted with Rich Cobalt steel. Valves entirely enclosed.

BEARINGS. All bearings bronze back babbitt lined; absolutely interchangeable.

OIL PUMP. Special design double pump, easily removed in case of necessity.

WATER PUMP. Gear type, of sufficient capacity to cool motor running at cam shaft speed.

MANIFOLDS. Intake and exhaust manifolds cast integral, making perfect flexibility possible, also absolute economy in fuel consumption.

REVERSE GEAR. Special Peerless multiple disc type, lubricated from motor oiling system. Reverse ratio 80% of forward speed.

STARTING and LIGHTING. Leece Neville 2 unit system.

IGNITION. Atwater Kent battery system.

CARBURETOR. Zenith or Schebler.

PEERLESS MARINE MOTOR CORP.
2160 NIAGARA ST. BUFFALO, N.Y., U. S. A.

Advertising Index will be found on page 136

More than "Good Enough"

RAJAH

SPARK PLUGS

Waterproof Type



**Waterproof
Shockproof
Breakproof**

Price \$1.25—All Threads

THERE are lots of fairly good spark plugs but there is only one *best* for marine use and that is the Rajah. Many boat race drivers send half way across the continent for a set of Rajah Plugs.

You can probably buy Rajah Plugs from your regular dealer; if not we will see that you are supplied. They cost no more than ordinary plugs.

The Waterproof type RAJAH Plug is the best plug to use in marine motors, particularly in open boats and out-board motors. You can drench this plug with spray or rain without missing an explosion. It is absolutely waterproof—in fact, the only successful waterproof plug on the market.

For cruisers and protected engines, there's nothing better than the Standard Rajah Plug.

Waterproof Rajah Plug \$1.25

Giant Rajah Plug 1.25

Standard Rajah Plug 1.00

Complete with Terminal

*If your dealer can't supply genuine Rajah
Spark Plugs and Terminals, write us,
stating thread or make of motor*

Rajah Terminals fit all spark plugs and are used by the leading manufacturers of marine motors, automobiles and ignition instruments. The Rajah Solderless Terminal is a special design which the motor owner can install in a few seconds without solder or tools. Send 15c for a sample.



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ESTABLISHED 1893

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Prevents Tarnish and Rust on Metals

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THE FIRST VARNISH FACTORY IN AMERICA

The Water-Lubricated Bearing

—that has set the whole marine world talking

Recent years have witnessed wonderful developments in the application of rubber to new and improved uses for industrial purposes.

One of absorbing interest and of far-reaching importance to the marine industry, is the Goodrich "Cutless Bearing." It is an entirely new application of rubber to bearings and it affects every type of craft from the largest to the smallest, in fact, wherever a bearing is used.

It uses water, not oil, as a lubricant. Its Olivite rubber surface, when wet, has far less resistance than an oiled surface, hence its life is far longer than any other bearing—whether wood, metal or babbitted types; sand and grit cannot become imbedded; bearing wear is eliminated, vibration is lessened, shaft scoring is a thing of the past.

We have records of most convincing performances showing this bearing's superiority under sandiest and dirtiest of water conditions. By all means investigate them—write for complete data.

It is mechanically easy to replace other bearings with Goodrich Cutless. Bearing comes complete with brass shell to slide into housing and is held by set-screw or collar key or any other mechanical means used for fastening sleeve bearings.

THE B. F. GOODRICH RUBBER COMPANY, Akron, Ohio
ESTABLISHED 1870

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"BEST IN THE LONG RUN"



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MARINE ENGINES

Will Outlast Your Hull

IT is commonly thought that a well-built boat will outlast two or three ordinary power plants. But this is not so if you choose a W-S-M because this engine is built to last as long or longer than your boat.

Every wearing part of the W-S-M can be replaced. Even the cylinder walls can be renewed at small expense for parts and labor. It is much cheaper to replace these than to regrind a cylinder block and fit it with new pistons, rings and bushings.

W-S-M construction embodies many other advanced features such as the sliding gear transmission, overhead valves in detachable cylinder head, unit power plant, three point support, pressure lubrication direct to each wearing surface, etc. etc. That is why you can confidently expect your W-S-M to last longer with lower repair expense than any other engine you can buy.

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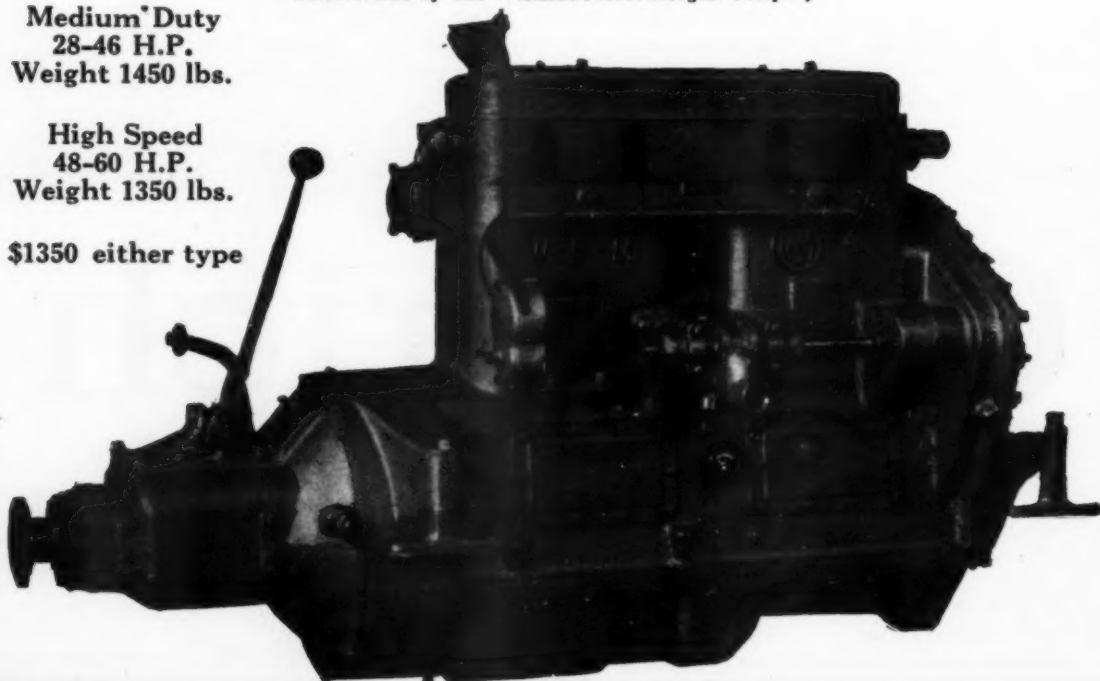
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THAT is the question to consider during the outfitting season. All too often a yacht paint that is dazzlingly white in June has become yellow and dingy in the Fall.

Paint films that seem hard and tough dry out and flake off in the course of the season. All this can be prevented by mixing MAPAZ into the white paint that goes above the water line.

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Mapaz No. 1 is The New Jersey Zinc Company's pure Zinc Oxide ground in refined linseed oil. It reduces chalking, improves the lustre, increases the whiteness of white paint, makes purer the colors of tinted paints, and makes both the colors and the paint film last longer.

Mapaz No. 1 is ground according to our formula by the following licensed manufacturers:

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The New Jersey Zinc Company



SMOOTH

Smooth as silk,—soft as velvet—the steady purr of the Niagara Special teaches you what real engine confidence means. It starts easily, runs evenly, accelerates rapidly or slows down to trolling speed, responding instantly to every touch of the throttle.

You expect such performance from a high priced, high powered engine. But when you find the same qualities in a 9-15 H. P. engine suitable for smaller boats, your surprise is only equalled by your admiration.

It is because Niagara Special is a four-cylinder four-cycle engine, embodying all the best features of up to date marine design. It isn't a redesigned automobile motor, or an assembly of automobile motor parts. You will recognize the typically marine design in many features.

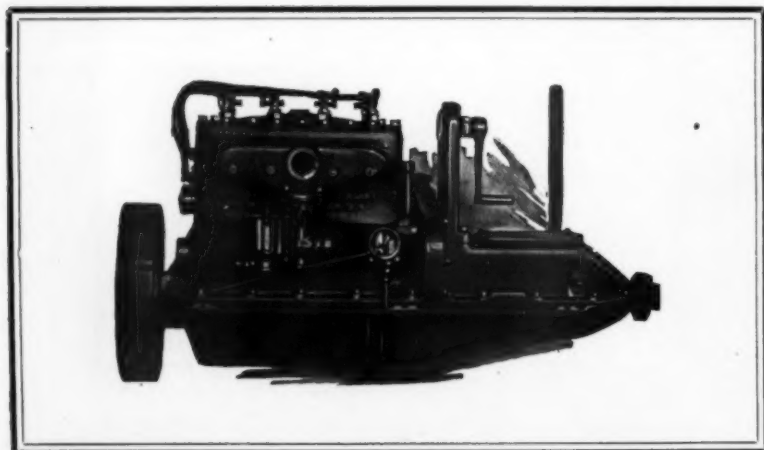
In medium duty service at 600 to 1100 R. P. M., Niagara Special develops 7 to 12 H. P. In high speed service it develops up to 15 H. P. at 1800 R. P. M. This covers the power requirements of runabouts, small cruisers and commercial boats.

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AT LAST! AN INEXPENSIVE SEA SLED

Outline Specifications

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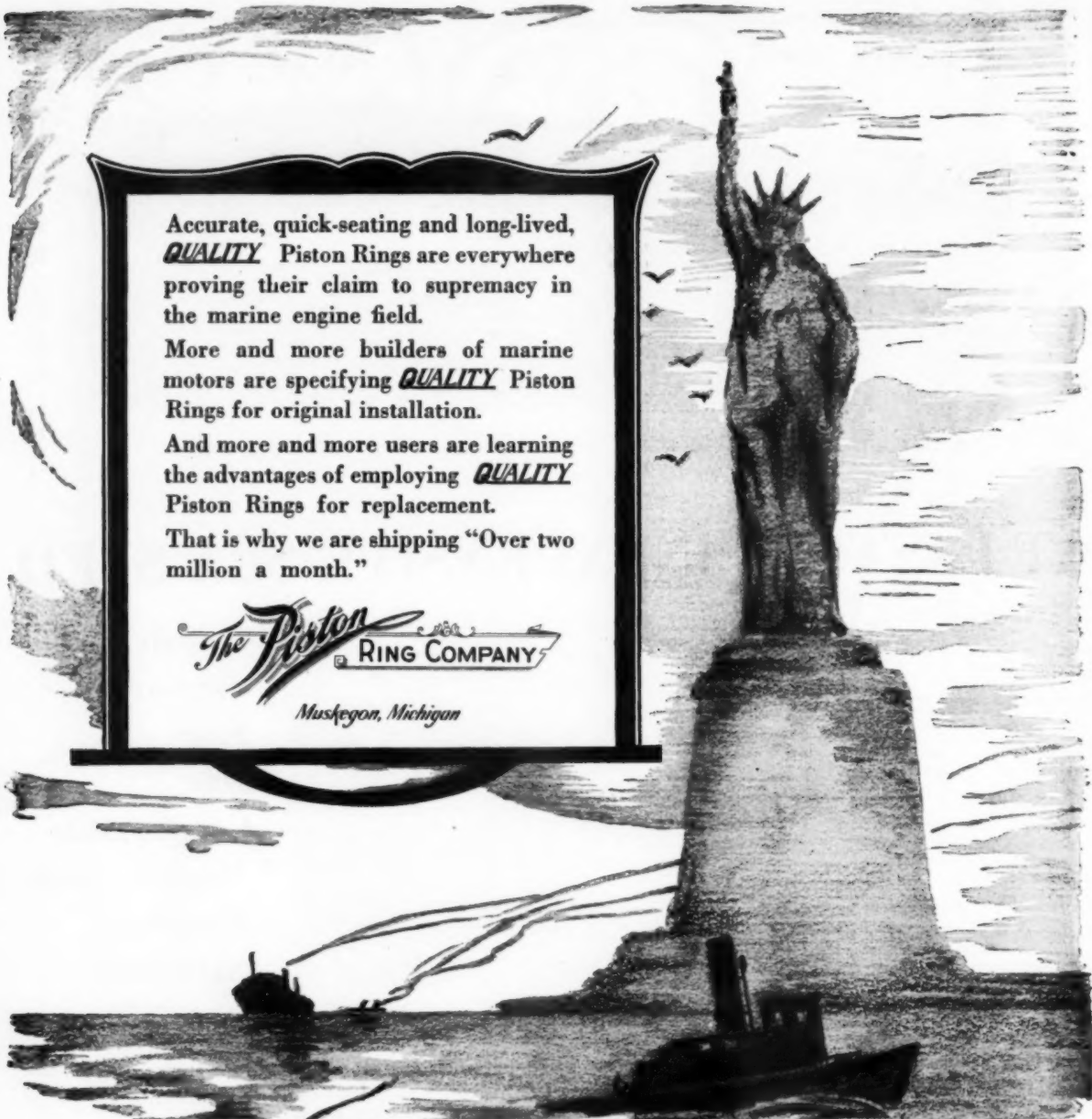
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Red Wing Thorobred
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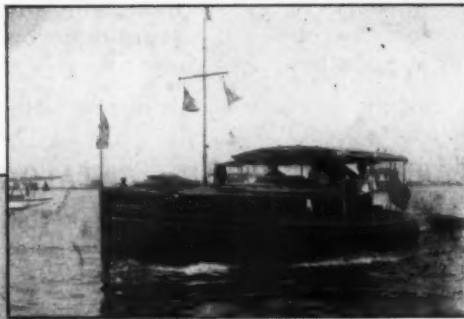
Cruiser — Runabout — Auxiliary

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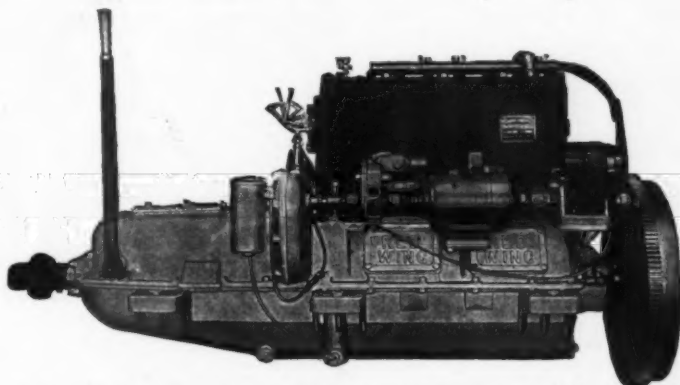


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Nine
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90 H.P.

The model B 32-40 H.P. Red Wing "THOROBRED" motor, which powers all the above illustrated boats. Paragon reverse gear running in oil bath, and pressure oiling system with drilled crank is regular equipment.

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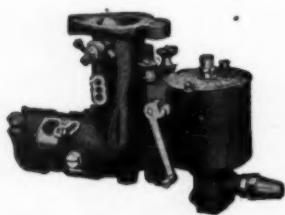
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*The World's
Finest* **CARBURETORS**
THE WHEELER-SCHEBLER CARBURETOR CO., INDIANAPOLIS, U.S.A.

Colonel Jesse G. Vincent

(Continued from page 84)

"I am, perhaps, what you'd call a bug for speed," grinned the Colonel. "I like to see things move—move as fast as they can. During the war I was obliged to test out new planes and new motors at Dayton. Some of the boys got a little worried because I felt that I should make these tests personal affairs. I made my first solo flight after my second lesson and after my third lesson I made the run from Dayton to Detroit with a passenger.

"It was after that flight that I received some kind words that I appreciated more than any that were given me during the war. Captain L. M. Woolson was my passenger and when we came to earth he shook my hand and said—

"Great stuff, Colonel. I felt just as safe as though I had been with a veteran pilot."

"I don't know that he did—but I certainly appreciated his compliment.

"I like golf, tennis, am fond of hunting; in fact, any outdoor exercise appeals strongly to me. No man, it seems to me, quite enjoys life so much as the man who gets out on the water. Water sports are the greatest there are."

Besides being vice president of engineering for the Packard Motor Car Co.—a job in itself which would be quite enough for the ordinary person—Colonel Vincent finds time to turn out a lot of new motors for the United States army and navy. He designed, and built, the six motors in the United States Navy's great airship, the Shenandoah, formerly the Z. R. 1, and there have been experts who have called these motors the best in the world.

He designed the Packard Single Six and Packard Single Eight. He says that anyone can design a complicated piece of machinery, or a complicated motor but it takes the hardest kind of work to design machinery, or a motor boat, that is simple in construction.

"It is simplicity in machinery that makes for efficiency," he declares.

Nor is he a swivel chair engineer. If ever you visit Vincent the chances are you will not find him in his office. He is much more likely to be located under a balky motor—his hands, face and white shirt covered with grease . . . for dirt doesn't bother him at all.

BETTER THAN EVER

Gray
**TWO
CYCLE**



Model U. 6-8 H. P.

Cut the High Cost of Boating

Get a famous Gray 2-cycle motor. Like the high cost of living, or the "cost of high living," boating expense is just what you make it. For instance, you can pay 50% to 100% more for an engine of the same horsepower without getting any greater reliability, any longer service, smoother operation, easier starting or better fuel economy than you get in the latest Gray Two-Cycles.

Gray 2-cycle is the most popular marine motor ever built. Literally thousands sold. Over 12,000 of the 2-cylinder "U" shown above in service today. And still "selling like hot cakes."

Better than Ever

Thirty years experience behind these motors. Constant improvement in design, better materials, better production methods, insure better service, smoother running, easier starting and longer life. Absolutely non-backfiring, simple and troubleproof as any machine can be.

More Power per Dollar

No wonder Gray 2-cycles give you more engine power per dollar of cost. Only three moving parts—piston, connecting rod and crankshaft,—so we can put the finest materials and workmanship into them without running up the cost. In fact they couldn't be better if we charged twice the price.

You have your choice of three models. Single cylinder, 3-4 H. P., or 5½-7 H. P. Double cylinder, 6-8 H. P. Complete satisfaction guaranteed.

Write today for the Gray 2-Cycle Bulletin and prices. Quick deliveries on early orders.

Gray Marine Motor Co., 6218 Lafayette Avenue, East Detroit, Mich., U. S. A.

50 Miles Guaranteed
Powered with 450 H.P. Gar Wood-Liberty
Marine Motor (1650 cu. in.). Speed of 50
miles per hour guaranteed on 50 mile trial.
NEW MODEL FOR 1924
Many improvements. A few of
these boats available now for
immediate delivery.

Baby Gar
World's Fastest
Practical Runabout
Winner of every race in its class

Decide now to own a duplicate of the original Baby Gar, fully guaranteed in speed, workmanship and every other detail of hull, power plant and equipment. You'll be sure of a successful boat, always interesting, always ready for a race, with the unmatched excitement and exhilaration of skinning over the water at 50 or 55 miles an hour.

Baby Gars are 33 ft. long with seating capacity for eight persons. They are staunchly built for daily service and are designed for general high speed runabout use as well as for racing. Boats fully equipped and furnished complete, ready to run.

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MOTOR BOATING PRACTICAL HAND-BOOKS

Every motor boatman has long felt the need for a really complete and comprehensive library devoted to his favorite pastime—motor boating. One of the obstacles to the accomplishment of this important work was the difficulty in finding any one writer who could cover the field in its entirety. In presenting the new series of practical hand-books, MoToR BoatinG believes that the problem has been solved at last. These books are edited by Charles F. Chapman, M. E., the editor of MoToR BoatinG, and they are the results of months of untiring effort on his part, together with the best of thousands of suggestions sent to him by motor boatmen themselves. The list of the contents given below will give you some idea of the vast amount of ground covered by these volumes.

Practical Motor Boats and Their Equipment

Volume 1.—The first volume tells you what the ideal boat for various kinds of service should be and what to look for in buying a boat. Many suggestions about decoration and hints on all kinds of equipment. All about steering gears, wireless outfits, electrical attachments, etc. Glance over the list of contents appended herewith: Hulls, Ballast and Seaworthiness; Round Bottom vs. Sharp Bilge; What Are the Advantages of Flare; Raised Deck vs. Trunk Cabin; Best Proportion of Beam to Length; Selecting a New Design; The Advantage of Bilge Keels; Open or Solid Deadwood? What Makes a Hull Seaworthy? The \$1,000 Cruiser; Buying a Second-Hand Boat; Types of Bows and Sterns; Exterior Arrangement of Cruisers; The Best Cabin Arrangement; Finishing Up the Cabin; Changes in Interior Arrangement; Interior Arrangement for Open Boat; Propeller-Rudder Arrangements; Best Position for the Rudder; Advantages of the Outboard Rudder; Different Steering Positions; Steering Equipments for Motor Boats; Steering Gear for the Cruiser; The Steering Gear for a Runabout; Steering the Boat from the Side; The Electrical Equipment; Making and Wiring a Switchboard; Electric Lighting on a Motor Boat; The Inexpensive Lighting Outfit; Wiring the Small Cruiser; The Storage Battery; The Dynamo Cut-Out; Wireless for a Small Cruiser; Tender for a Thirty-foot Cruiser; Building a Folding Dinghy; Installing the Boat Boom; What Is the Best Galley Arrangement; Ventilating the Galley; The Galley Stove and Its Installation; Making a Fireless Cooker; A Portable Cook Box; Running Water for the Cruiser; How to Build a Portable Table; A Table for the Open Boat.

Practical Motor Boat Building

Volume 2.—As its title implies, this volume takes up the building of your own boat. It also covers the construction of the necessary fittings such as awning, windshield, etc. Every boatman some time or other builds a boat, and a book of this kind will save much time and prevent many mistakes. List of contents: Types of Motor Boat Fastenings; Boat Building Woods; Laying Down a Boat's Lines; Converting a Trunk-Cabin Cruiser; A Steam Box for Amateur Builders; Joiner Between Stem and Keel; Fastening the Frames and Floors; Boring the Forgotten Limbers; Fitting the Garboard Plank; Boring the Shaftlog; Fitting the Stuffing Box; The Stern Bearings for a Cruiser; A Water-Tight Companionway; How to Canvas a Deck; Hinged Water-Tight Hatches; Making a Water-Tight Hatch; The Coaming of an Open Boat; Fitting a Swinging Port Light; Making a Self-Bailing Cockpit; A Water-Tight Window Sash; Making a Water-Tight Skylight; How to Build an Engine Housing; How to Make an Engine Cover; Building a Tool Locker; Constructing an Extension Transom; How to Make a Pipe Berth; An Ice Box for a Cruiser; Installing a Toilet; How to Rig a Signal Mast; How to Make a Spray Hood; Fitting a Folding Windshield; An Awning for the Open Boat; A Cover for the Open Cockpit; Screen for the Side Light; A Support for the After Light; A Seat for the Man at the Wheel; Removable Davits for the Cruiser; The Boarding Steps; A Bow Rudder for Your Hydro; The Motor-Driven Club Tender.

Practical Things Motor Boatmen Should Know

Volume 3.—Navigation is one of the important subjects covered in volume three of the series. Tells you how to steer, how to increase the factor of safety, and a host of other things relative to the proper running of your boat. The chart and compass are both fully explained in a clear and comprehensive manner. The list of contents will tell you more about it: Advice for the Beginner; Lessons Learned from Experience; Good Things to Know; Increasing the Factor of Safety; Which Way Should the Boat Steer? Why a Boat Steers Badly; Why Do Boats Squat? Figuring the Boat's Speed; Balancing the Cruiser; Getting Off-Bottom; To Ride Out a Storm in a Motor Boat; The Why and How of Storm Oil; Preventing Fire; Handling Ground Tackle; Government Charts; Stowing the Anchor on a Cruiser; Diminishing Deviation; Preventing Electrolysis; Stowing and Using Charts; How to Make a Chart Case; Keeping a Motor Boat's Log; How to Make a Sextant; Tides and Tidal Waters; Taking Her Through the Canals; The Best All Round Dinghy; Towing the Tender; Handling the Dory in a Seaway; Getting the Tender Aboard; Planning for a Cruise; Equipping for a Cruise; Equipment for Offshore Cruising; Novel Events for Regatta Day; Handicapping; The Object of a Handicap Rule; Laying Off a Race Course; Measuring the Length of a Race Course; Preparing a Boat's Bottom for a Race; How to Build a Turning Buoy; Starting Boats in a Race; Stowing the Signal Flags; Fitting a Gun Mount; A Fish Box for Your Cruiser; A Cabin Wall Rack.

Practical Marine Motors

Volume 4.—All about the marine motor; what it should and should not be. Tells why the automobile engine is unsuccessful in marine work. The best location for your engine; the ideal engine bed, the fuel tank, exhaust and countless other suggestions that will enable you to get the best results from your power plant. List of contents: Purchasing a Marine Motor; How Many Cylinders? Power Per Cylinder; High Speed vs. Heavy Duty; Long Stroke vs. Short Stroke; Correct Motor Design; Changes in One's Power Plant; The Things that Cause Vibration; The Automobile Engine for a Boat; The Best Position for the Motor; The Ideal Engine Compartment; Placing the Engine in the Hull; Installing a Motor in a Canoe; Installing Power in a Yawl; Converting a "Banker" to Power Engine Installation in a Hydroplane; Putting Power in the Rowboat; Limits of Shaft Inclination; Constructing the Engine Bed; Getting the Motor Aboard; Lining Up the Propeller Shaft; The Best Exhaust; Mufflers vs. Under-Water Exhausts; Installing an Under-Water Exhaust; Primary Batteries for Ignition; Keeping the Ignition System Dry; Installing a High-Tension Magneto; From Make and Break to Jump Spark; Installing the Gasoline Tanks; Taking Care of Extra Gasoline; Spark and Throttle Controls; Constructing a Rear Starter; Propeller for Engine and Hull; Installing a Universal Joint; Gearing Motor to Propeller Shaft; The Automobile Throttle; Harnessing the Main Engine; Rebabbiting a Worn Bearing; Should Fuel Line Be Inside or Outside?

Practical Motor Operation and Maintenance

Volume 5.—One of the most valuable books of the entire set. Your motor's ills and how to cure them. This volume tells you how to adjust your carburetor, how to fit piston rings, how to remedy a poor compression and a number of other things that will enable you to doctor your own motor. List of contents: Locating the Motor's Troubles; The Overheated Motor; Starting in Cold Weather; Overhauling a Marine Motor; How to Save Fuel; The Fuel Situation; Using Low Grade Fuel; How to Run on Kerosene; Supplying the Fuel to the Carburetor; Adjusting the Carburetor; Cleaning the Fuel Tanks; Cleaning the Gasoline Line; Stopping Up the Leak in the Tank; A Home-Made Gasoline Gauge; Carrying an Extra Supply of Oil; Mixing the Fuel and Lubricant; Remedying Leaky Compressions; Killing the Carbon Jinx; Tool and Spare Parts to Carry; Removing and Replacing Piston Rings; Repairing a Leaky Cylinder; Grinding a Motor's Valves; Setting the Valves; Timing the Ignition System; Cleaning the Water Jacket; Making and Fitting a Gasket; Patching Up a Bearing; Straightening the Sprung Shaft; Truing a Bent Propeller; Removing the Flywheel; Separating Couplings and Pipe Fittings; Changing the Shaft Hole Location; Utilizing the Exhaust; Disposing of the Bilge Water; Heating a Small Cruiser's Cabin; Operating the Outboard Motor; The Clean and Quiet Boat; Charging a Storage Battery; When the Motor Stops Unexpectedly; Making a Unit Power Plant.

Practical Suggestions for Handling, Fitting Out and Caring for the Boat

Volume 6.—This volume is an especially valuable one. You will find in it points covering the care of your boat that you never dreamed of before. Whether you are a beginner or a finished expert, this book will give you a better knowledge of the handling of your craft than you can imagine. List of contents: Putting the Boat Into Commission; Fitting Out a Thirty-Footer; Suggestions for the Beginner; Refinishing Bright Work; Keeping the Wood Surface Bright; Putting the Boat Out of Commission; Laying Up an Unsheltered Boat; Hauling Out for the Winter; Covering the Boat for the Winter; Launching from a Wharf; Correcting Faults; Lengthening Out the Boat; Moorings and Buoys; Taking Steps to Safeguard the Anchor; What to Use in the Bilge; Preserving the Wood in Boats; Emergency Rigs for the Cruiser; Auxiliary Sails for the Cruiser; Providing an Emergency Rudder; Preparing for Southern Waters; Stopping the Troublesome Leak; Replacing a Broken Plank; Removing Broken Lag Screws; Raising the Boat's Stern; Clearing the Propeller; Protecting the Bow and Stern; Open Boat Sleeping Quarters; Ventilating the Cabin of Small Cruisers; Converting the Open Boat to a Cruiser; Making a Cover for the Open Boat; Preventing Electrolysis; Building a Club Float; A Floating Boathouse; Constructing a Landing Stage; Building the Marine; Keeping the Thief Out; A Place for Your Shore Clothes; Stowing for Life Preservers; The Winter's Alterations; What Changes Shall I Make; The Satisfactory Bilge Pump; The Pressure Water System; Making a Pelorus; Your Storm Curtains; Life-Saving Equipment; The Absent Owner's Anchor Light; Mounting the Reverse Gear.

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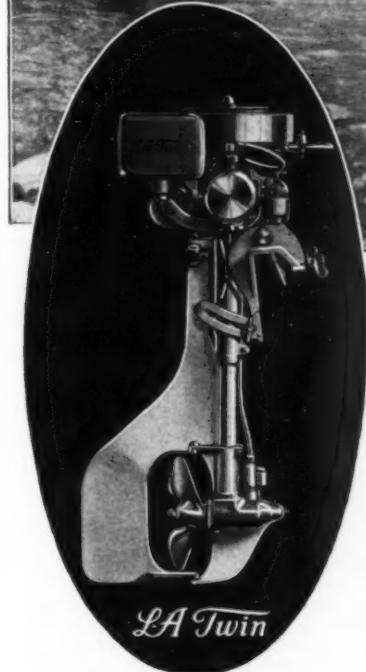
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Advertising Index will be found on page 136

THIS SYMBOL IS YOUR GUARANTEE OF SATISFACTION



L-A Twin

Lightest weight outboard engine of its power on the market — 3 full H. P.

A light, powerful, speedy, PRACTICALLY VIBRATIONLESS motor—upholding the Lockwood-Ash reputation for sturdiness and reliability.



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Stay in your boat in waters like these. The L-A Twin will drive your craft through waters where rowing is almost impossible. Shallow streams, inlets, rocky, snaggy channels—the L-A Twin will navigate them all, swiftly and safely, **WITHOUT DAMAGE TO YOUR BOAT, WITHOUT DAMAGE TO YOUR MOTOR.** Automatic tilting of friction type protects the back end of the boat. The patented L-A Slipping Clutch Propeller safeguards the propeller blades and protects the motor itself. **THE L-A TWIN IS ABSOLUTE PROOF AGAINST ALL UNDER-WATER OBSTACLES.**

A Wealth of Special Features

The L-A Twin has the most powerful magneto in outboard field; Rope and rudder steering; indestructible gas tank; under-water parts made of non-corrosive Lynite; quiet exhaust; Alemite lubrication. It is built for **DAY-IN, DAY-OUT SERVICE.** A sturdy, dependable power plant for boatman or resorter.

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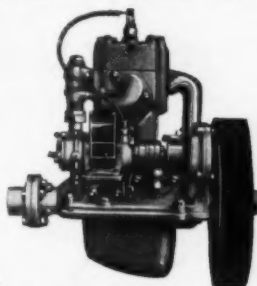
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Builders of Marine Engines for 21 Years

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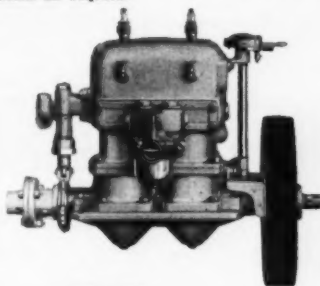
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Backed by 21 years of conscientious building, and reliable service.



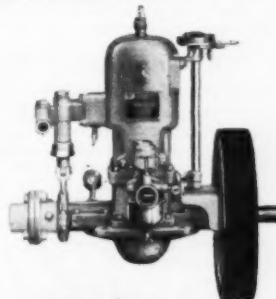
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If you want a gear that will outlast your engine with a minimum of attention, buy a Gies. Gies Gears sold 15 to 18 years ago are still in service.

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Special No. 1,	1½	H. P. per 100 R. P. M.,	Weight 48 lbs.
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Write today for further details or send your order at once if in a hurry.



GIES GEAR COMPANY • 441 FORT ST. EAST • DETROIT, MICH.

Yard and Shop Powerful Engines Available in Chicago

(Continued from page 66)

Gar Wood has announced the appointment of the Hubbard Erickson Company of Chicago as the distributors in that territory for his powerful marine engines of the Liberty Marine type. In addition, the 300 h.p. Fiat type marine engines, which are being marketed by the Detroit Marine-Aero Company, will be distributed in Chicago through the same agency. H. H. Chadwick, the manager of the Marine Engine Department of the Hubbard Erickson Company, is looking forward to a large demand for these powerful machines among the fast boat owners in Chicago and vicinity.

Kermaths in Stock Boats

The standard Kermath 25 h.p. engine has been selected for another standardized cruiser. Mr. Kyle of the T. A. Kyle Company, with thirty years yacht and boat experience, is building a 38-foot by 10-foot cruiser which will be fitted with a Kermath engine as standard equipment. Ten of these new boats are already in the works and will be completed soon. Mr. Kyle states, that the Kermath engine has been selected because of its power and rugged design, and as one having mighty wonderful qualities for his splendid new boat.

with Mr. Benington.

Sea Sled Company Active

The heavy demand for the products of the Sea Sled Company at West Mystic, Conn., has made it necessary to increase the working force to a double shift, and it is contemplated that three shifts may be necessary in order to cope with the volume of business on hand and in sight. In addition to the standardized 22 and 25-foot stock Sea Sled runabouts, and the standard 11 and 13-foot dinghies, which are under construction, they are building Sea Sleds of special types for many prominent yachtsmen. These include fast 30-foot runabouts with two six-cylinder Hall-Scott engines, a fast 35-foot cruiser with two GRS Sterlings, and many others. The dinghies have proved so popular that they have been put into quantity production and stocks of them are carried at distributors throughout the United States.

Advertising Index will be found on page 136

Elto Expands to Meet Demand

The Elto Outboard Motor Company still continues to increase its manufacturing capacity to meet the big demand for Elto Light Twin Motors. The Elto Organization under the efficient management of its President and General Manager, Ole Evinrude, has grown phenomenally since the introduction of its latest motor, the Elto Light Twin. The outdoor public was quick to recognize the superiority of this excellent motor and this year's demand, which promises to be far in excess of that of any previous year, is keeping the factory running both day and night. Not only has it been necessary to recently add more factory floor space but new and larger offices have also been found necessary and the Company has secured a fine suite of offices right in the heart of Milwaukee, making them easily available and convenient for visitors and business callers. Ole Evinrude has added several fine improvements to the Elto this year and there is every indication of a busy year ahead for this Company.

Outboard Motors Popular in India

Outboard motor racing can no longer be classed as an American sport exclusively. At a recent two-day program of land and sea sports held at Johore, Strait Settlements, in honor of the fiftieth birthday of His Highness, the Sultan, an eighteen-mile outboard motor race was held.

A few days before the races took place, a challenge was placed in local papers by W. Martin, the Singapore agent for the Evinrude Motor, urging orders of outboard motors to enter the races, which were open to all makes of motors regardless of number of cylinders or horse-power, all boats to start from scratch.

The first day's race was won by a 3½ h. p. Evinrude motor, owned by the Sultan, himself. The Sultan's motor was attached to a typical Malay Sampan and was driven by one of the natives. The length of the course was eighteen miles, three times around a six-mile course. Time of the winner was two hours and fifty minutes. The second day's race was won by a 2 h. p. Evinrude Motor owned and operated by a sportsman from Singapore. A large shield as well as cash prizes were awarded by Johore's Sports Club, under whose management the races were held.

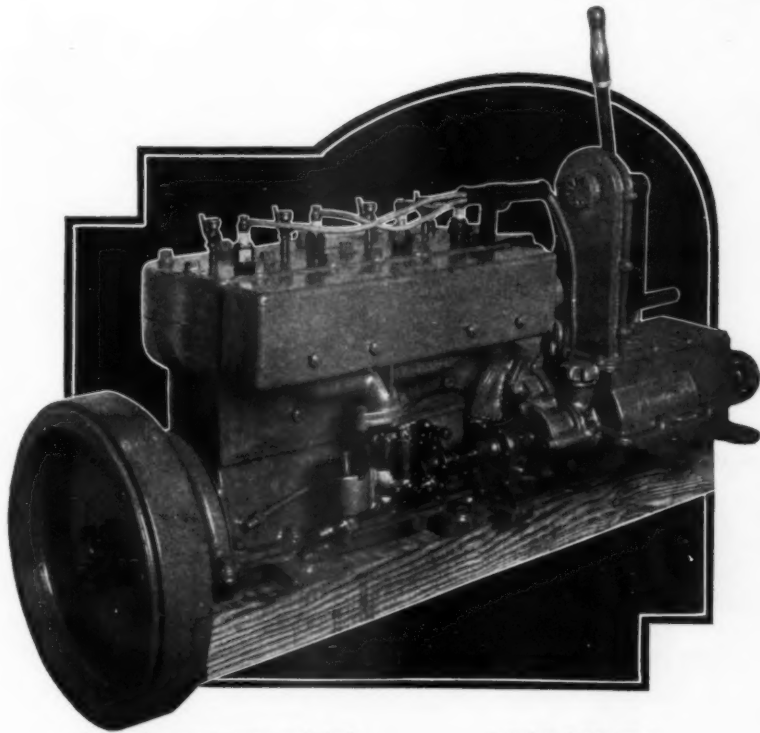
(Continued on page 112)

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when you can get an

INTERNATIONAL-16

Model
1924 for \$187⁵⁰



Inclosed reverse gear, with built in rear starter, \$61.00 extra.

A Coil is \$6.00 extra.

The International-16

Because of the low cost of large production on the 1924 International-16, it is possible to sell them for less than the average charge for a thorough overhaul on any other engine in the International's class. Besides, because of its Ford replacement part feature, it can be repaired at a minimum cost.

It is no longer necessary to buy an engine for your boat that is without adequate service facilities for a "Ford Service Station is the nearest service."

The International-16 develops 10 H.P. at 500 R.P.M. and up to 18 H.P. at 1200 R.P.M. Weighing only 290 pounds and compact in construction—it is an unusually adaptable engine.

With its 4 cylinders it provides a fast runabout—a reliable cruiser—a powerful auxiliary work boat.

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MEN who know motors choose the SPORT TWIN—the husky little Evinrude 40-pounder.

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No starting troubles with the Sport Twin. The Easy Starter whirls the flywheel past four firing points, and the Flywheel Magneto never misses a shot.

For dinghy and tender service, the quiet, vibrationless Sport Twin is ideal—and it's the prettiest little job you ever clamped to a boat!

See your Evinrude Dealer today
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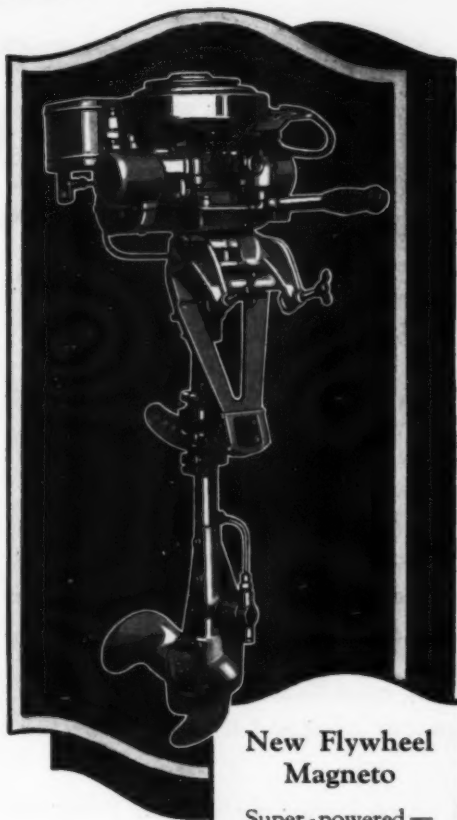
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Super-powered—assures instant starting and amazing performance. Moisture-proof. Eliminates heavy, uncertain batteries.

EVINRUDE

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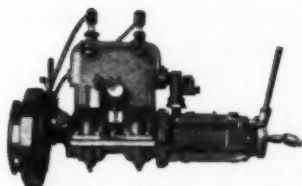
Float feed design—an exclusive Evinrude-Zenith model. Needs no adjustments. Throttles and accelerates quickly and evenly. Saves "gas".

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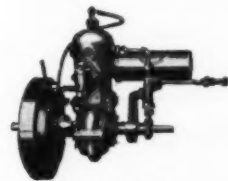
—automatic—at a lift of the tiller. Reverses drive instantly, without swinging motor around. Simple, certain and absolutely safe. No other like it.

New Safety Tilt-Up

Motor cannot be injured by snags, shallows, or beaching (you can pull the boat right up on the dock). Can be locked for starting.



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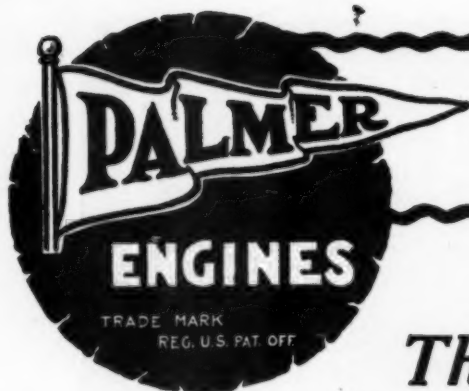
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There's a Palmer Engine Just Suited to Your Boat

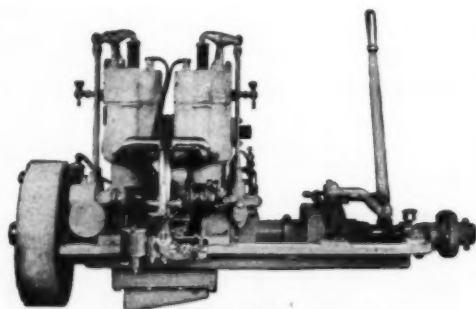
FOR many years Palmer Bros., have built the largest and most complete line of marine engines on the market. We have an engine exactly suited for every size and type of boat from a little launch or yacht tender up to a big cruiser or commercial boat.

In fact, most boat owners will find a choice of two or three Palmer models, depending on the amount of speed they want or the type of work they want it for.

The newest Palmer model is the YT-2, a double cylinder edition of our popular little 2 H. P. single cylinder four cycle yacht tender engine. It's up to date in every particular, with overhead valves, combination force feed and splash lubrication, high tension magneto with impulse coupling and counter balanced crankshaft.

Without reverse, weight 200 lbs. \$200.

With reverse gear, weight 260 lbs. \$240.



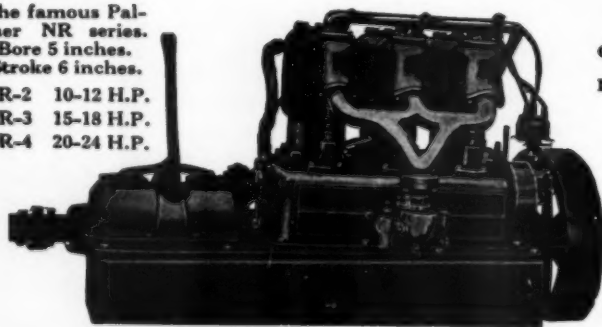
Model YT-2, \$200 to \$240.

The famous Palmer NR series.
Bore 5 inches.
Stroke 6 inches.

NR-2 10-12 H.P.

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NR-4 20-24 H.P.



Palmer Engines are built for every type of boat, 2 H.P. to 80 H.P. High speed, medium duty and heavy duty.

You'll never find a better built, more carefully designed or more reasonably priced motor than the Palmer, no matter which size and type of Palmer engine you consider.

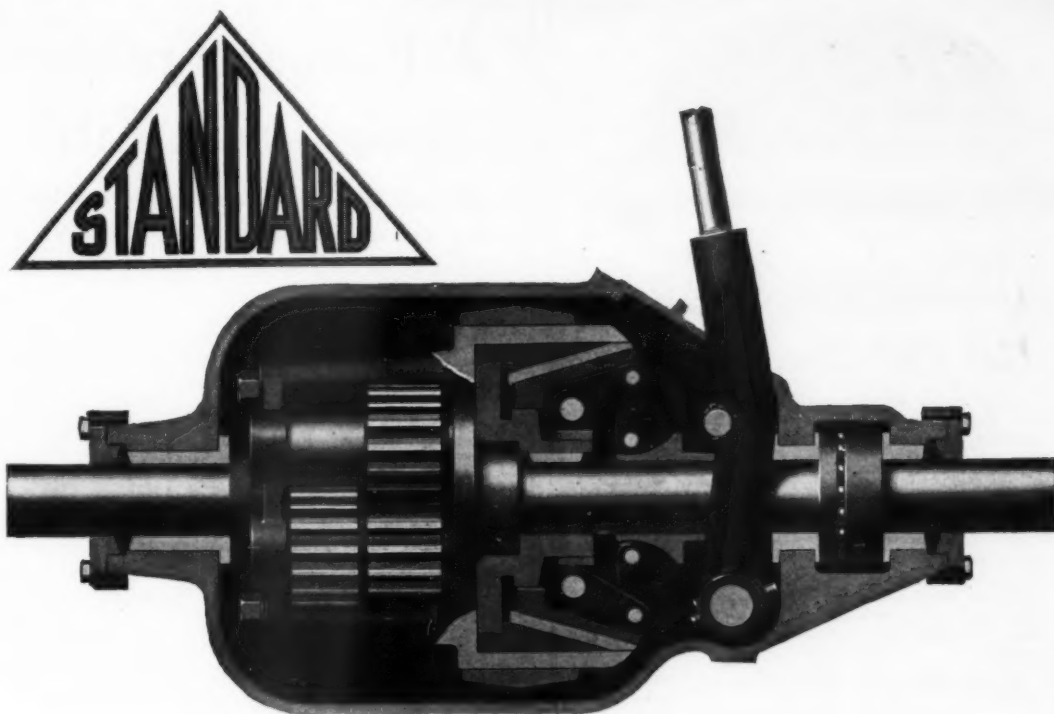
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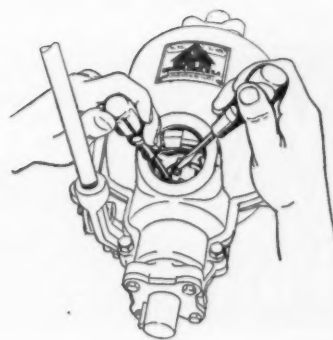
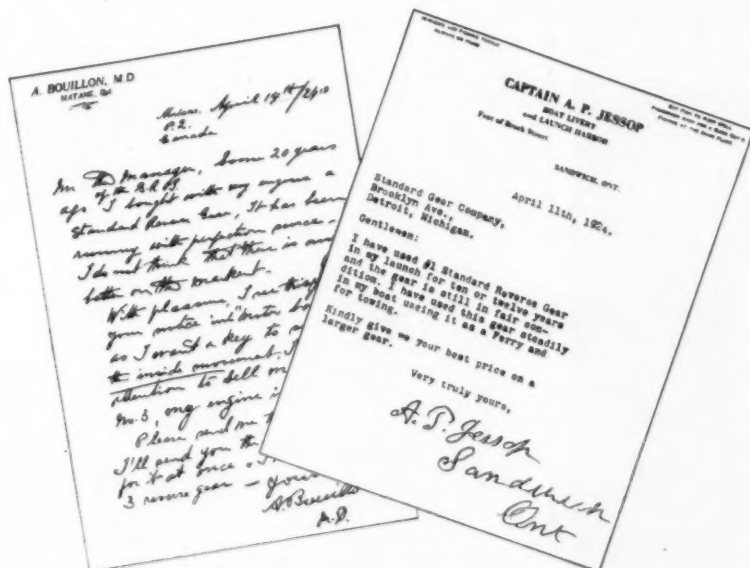
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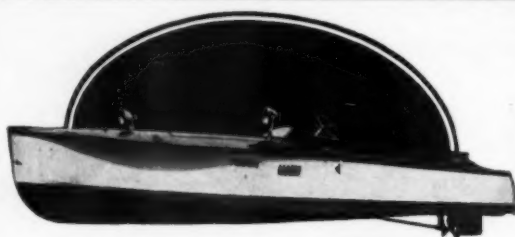
This shows the easy accessibility of the clutch adjustment—it can be done with a screw driver and the opening is large enough to reach in with the hand.

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Copper "Best" Paint Brown—Yacht Copper Paints—Special Red and Special Green—Yacht Bottom Paints, Copper Bronze, Light Sea Green and Regatta Green—Yacht Whites, Gloss or Flat—Adamant Deck Paint—Best Spar and Sparon (Spar) Varnish—Engine Enamels—Marine Mixed Paints—Elastic Seam Compound—Boat Bottom Seam Compound, etc.

Copper Oleate Fish Net Preservative
Send for color cards and booklet—
How to Paint a Boat—Free



C.A. Woolsey
Paint & Color Co

Established 1853

Jersey City N.J., U.S.A.

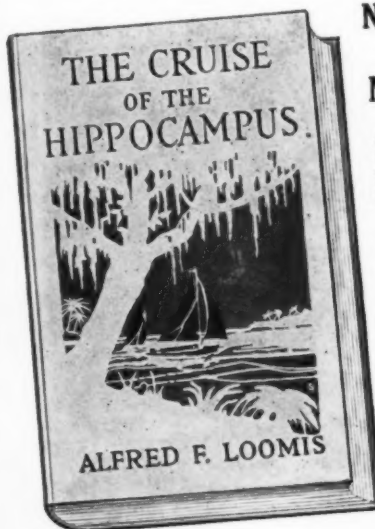
A Famous Cruising Book—as a Gift!

MoToR Boatmen everywhere are taking advantage of MoToR BoatinG's offer to send you the greatest cruising story ever written.

Get this delightful book that proves the exciting possibilities of small boat cruising as nothing before has ever done. Its famous author, Alfred F. Loomis, takes you on a 3,000-mile trip in a 28-foot yawl to all the points of interest on the Atlantic Coast, through the West Indies and across the Caribbean Sea to the Panama Canal.

Send for Yours Today!

This story will bring you the tang of the sea and thrills you anew with its buoyant spirit of adventure. The book sells for \$2.00, but it is yours now for the asking. The regular price of a year's subscription to MoToR Boating is \$3.00. Now for only \$3.50 you may have both the magazine and the book!



No Money Is Necessary

All that is required is your name and address on the Coupon below. If you are on our regular list we will extend your subscription a year. But take advantage of this offer now!

MoToR BoatinG, Dept. 524,
119 West 40th St., New York City

Gentlemen: I desire to take advantage of the Special Offer of one year's subscription to MoToR BoatinG and "The Cruise of the Hippocampus" for only \$3.50. Enclosed find \$3.50 (or I will remit \$3.50 on receipt of your bill).

Name

Address

City and State.....

(Foreign postage other than Canada, \$1.00 extra per year)

The Williams Gold Refining Co.
MADE IN BUFFALO
SHELFERS AND REFINERS
DENTAL GOLDS
2978 MAIN ST.
BUFFALO, N.Y.
Cable Address
WILGOLD BUFFALO
WESTERN UNION CODE
BENTLEY CODE
BRANCH AT
BRIDGEBURG, ONT.

April 14, 1924.

Mr. G. H. Brodie,
Packard Motor Car Co.,
Detroit, Mich.

Dear Mr. Brodie:

I ought to have written to you before this to tell you how pleased I am with that Gold Cup Motor. It went through the races at Miami and also at Havana without one single adjustment. I wired you before the races for that box of spare parts but I shipped them back to Buffalo without even opening the box.

On the first day of the sweepstakes race in Miami it certainly was marvelous to see my little boat pass four other jobs that were powered with Liberty Motors.

In the runabout class it was simply a walk-away in spite of the fact that my motor was the smallest in the race.

My boat is now in Detroit and I intend to be up there soon doing a little experimenting with it and at that time I would be glad to take you for a ride if you care to come.

Yours sincerely,
Williams

JAW:G



Wilgold, winner of the Havana and Miami races—powered with Packard 1M-618 Marine Engine.

There Is a Packard Marine Engine Which Will Exactly Fit Your Needs

Mr. Williams' letter is typical of many in our files, testifying to the fact that Packard Marine Engines are unequaled for speed, power and dependability.

For all around use in runabouts and tenders up to 18 feet in length, Packard Model 1M-268 is especially in demand. It weighs only 625 pounds, develops 45 H.P., and is extremely compact and accessible.

For boats ranging up to 35 feet in length and requiring speed of 20 to 30 miles an hour, Packard Model 1M-357, 8 cylinder, 60 H.P.; weight 690 pounds; is especially suitable.

For all around use these two engines will give you speed, dependability and operating economy beyond comparison with other engines of their type and size.

Bear this in mind—any Packard Marine Engine, of any type, is always a leader—the finest example of its kind, and doing its full share to maintain the prestige that has always been associated with the name Packard.

Full details regarding Packard 1M-268 and 1M-357 on request. Write us regarding your requirements. Special terms to Builders and Dealers.

Packard Marine Engines made in 5 different models.

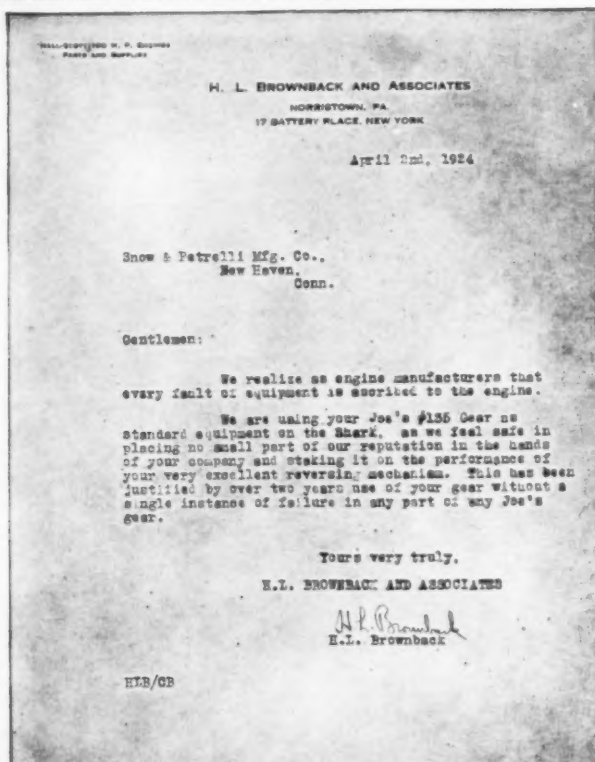
PACKARD MARINE ENGINES

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Why they "put it up to old man Joe"



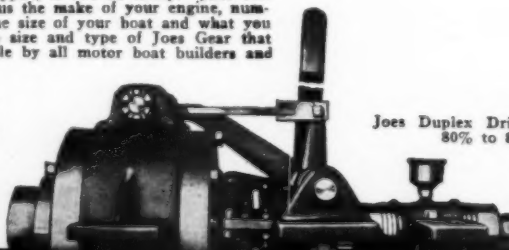
**Letters from 35 Leading
Engines Builders**
 who use Joes Gears as Standard Equipment



If your engine is not already Joes equipped, it can be easily. Just call at the nearest Joes Distributor; or tell us the make of your engine, number of cylinders and bore and stroke, the size of your boat and what you use it for, and we will recommend the size and type of Joes Gear that will give you the best service. For sale by all motor boat builders and accessory dealers.

Complete catalog of Joes Reverse Gears, Safety Rear Starters and One-Way Clutches and Flange Couplings on request.

The Snow & Petrelli Mfg., Co.
 154 Brewery St., New Haven, Conn.



Joes Duplex Drive the Gear that Reverses
80% to 88% of Motor Speed

More leading engine builders use Joes Gears as standard equipment than any other make.

JOES FAMOUS REVERSE GEARS

REVERSE 80%~88% of MOTOR SPEED

SERVICE

After You Buy A Joes Gear

The following distributors carry a stock of Joes Gears and parts and gladly give you free service.

Boston, Mass.—Gray-Aldrich Co., Inc., 6 Commercial Wharf
 New York—Sutter Bros., 44 Third Ave., Service Station foot E. 32nd St., Brooklyn
 Clayton, N. Y.—St. Lawrence River Motor & Machine Co.
 Philadelphia, Pa.—W. E. Gochenaur Mfg. Co., 631 Arch Street
 Baltimore, Md.—Unger & Mohan, Inc., Pratt and Gray Streets
 Detroit, Mich.—Henry H. Smith & Co., 334 Jefferson Ave., East
 Cleveland, Ohio—Wm. F. Meier, 1433 W. 77th St.
 St. Louis, Mo.—William Grossmann Boat & Motor Co., 1630 Pine St.
 Chicago, Ill.—W. L. Masters & Co., 880 N. Clark St.
 New Orleans, La.—Arthur Duvie's Sons, 138 Chartres St.
 Southern California—Fellows & Stewart, Inc., Wilmington
 Seattle, Wash.—Pacific Marine Engine Co.
 Southern Alabama and N. W. Florida—Maine Supply Co., Mobile, Ala.
 Canada—All Branches—Canadian Fairbanks-Morse Co.
 Newfoundland—John Baron & Co., 241 Water St., St. John's, N. B.
 New Brunswick, P. E. I.—T. McAvity & Son, St. John's, N. B.
 England—J. King & Co., 10 Church Row, Limehouse, E. London
 Turkey—Flat-Filiale di Constantinople Galata, Palazzo Karakumy, No. 13-15
 Argentina, S. A.—J. Hanham & Sons, Buenos Aires
 Victoria, Australia, Melbourne—Acme Cycle Co.
 Japan and Australia—Melchior, Armstrong, Densau Co., 116 Broad St., New York, U. S. A.



"I Recommend the Miller Motor to anyone who Desires Utmost Reliability in Marine Service"

—Judge Persons

EVERY business man will agree that the value of a recommendation depends on the responsibility of the person who makes it. What could be more convincing than the following letter? Read every word of it.

FLINT JUDICIAL CIRCUIT
Monroe, Lamar, Butts and Henry Counties
G. Ogden Persons, Judge
Forsyth, Georgia

February 14th, 1924.

Miller Motor Corporation, Chicago, Ill.

Gentlemen: I can gladly attest to the quality and service of the Model I-4 Miller motor purchased in May, 1920. It has never been repaired since it was installed nor ever removed from its original bed. With the exception of grinding the valves and removing carbon, not a cent has been spent on it for repairs.

I think that this is also true of the engine sold to Mr. Callahan of Bainbridge, who like myself purchased through the Marks Brok. Co., of Apalachicola, Florida. Mr. Marks says that your motor is the most reliable motor that he has ever had any experience with regardless of price.

I remember that when I was on my return from San Francisco in the summer of 1920 I called by your place to see what resources I had in the way of service for my engine, and your Mr. Miller was inquisitive to know what I meant by service; when I explained that I meant the readiness with which parts could be supplied, he replied by saying that the engine did not need any parts, and his statement has been verified. I gladly recommend the Miller motor to any one who desires utmost reliability in marine service.

Yours very truly,
(signed) Ogden Persons

While this letter refers to the 24-30 H.P. medium duty Miller the same features and same quality of construction are built into every Miller Engine. If you select a Miller you can be sure of Utmost Reliability, whether you get a 4 H.P. or 50 H.P. engine.

Single Cylinder Models, Medium Duty

F-1, 4 H.P., 4 1/4" x 5", weight 410 lbs.
I-1, 6 H.P., 5 1/4" x 6", weight 500 lbs.

Two Cylinder Models, Medium Duty

F-2, 10 H.P., 4 1/2" x 6", weight 625 lbs.
I-2, 14 H.P., 5 1/4" x 6 1/2", weight 800 lbs.

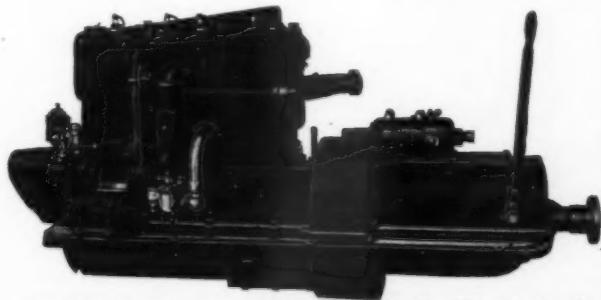
Four Cylinder Models, Medium Duty

D-4, 6-14 H.P., 2 1/4" x 4", weight 250 lbs.
E-4, 12-20 H.P., 3 1/4" x 5", weight 700 lbs.
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I-4, 24-30 H.P., 5 1/4" x 6", weight 1600 lbs.

Four Cylinder Models, Heavy Duty

R-4, 28-35 H.P., 5 1/4" x 7 1/2", weight 2000 lbs.
S-4, 40-50 H.P., 6" x 9", weight 2800 lbs.

Miller Kerosene Attachment at slight extra charge.



Write today for catalog and prices

Millers Motor Corporation

2333 North Talman St.

Chicago, Ill.

Model R-4, 28-35 H. P. at 400 to 500 R. P. M. All enclosed, unit power plant.

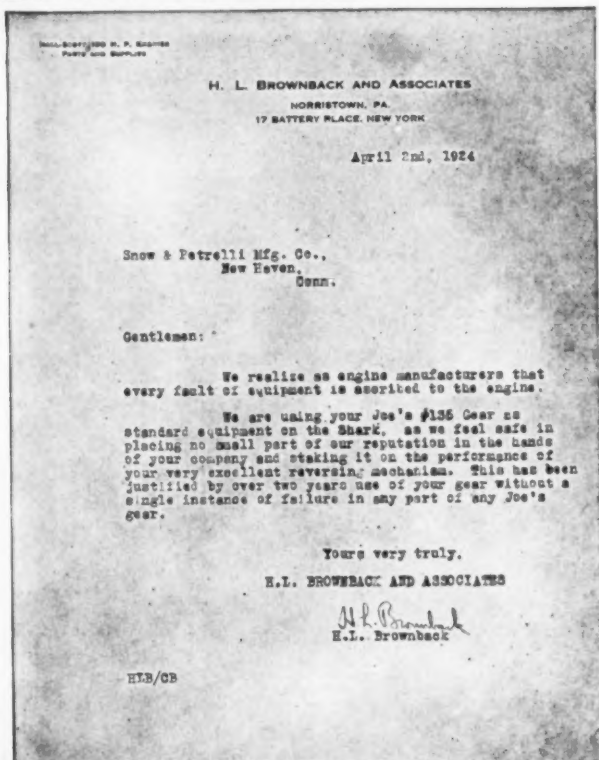
Electric starter and generator, air compressor, magneto, governor and kerosene attachment.

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Why they "put it up to old man Joe"



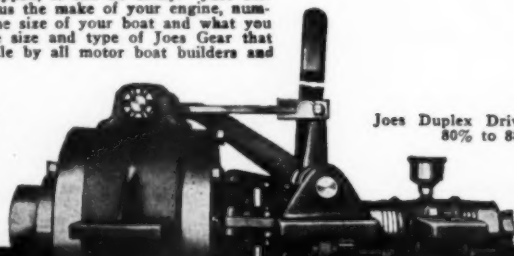
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Single Cylinder Models, Medium Duty

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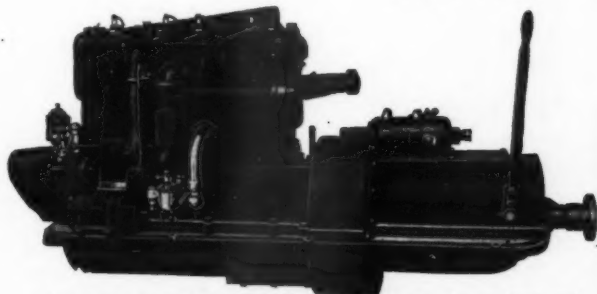
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Miller Kerosene Attachment at slight extra charge.



Model R-4, 28-35 H. P. at 400 to 500 R. P. M. All enclosed, unit power plant.
Electric starter and generator, air compressor, magneto, governor and kerosene attachment.

Write today for catalog and prices

Millers Motor Corporation

2333 North Talman St.

Chicago, Ill.

A SAFE INVESTMENT

Because we have been building them for 23 years and their merits have been fully demonstrated in world-wide service.



17 Sizes: 2 H. P. to 100 H. P.: One to eight cylinders: Equipped for gasoline or kerosene

If you own a substantially built runabout, cruiser, auxiliary or commercial boat, the Regal is just the type of engine you should buy for it. Four cycle medium speed engines, built to run all day or all week if necessary with economy of fuel, freedom from troubles and the minimum of attention.

More than half the Regal Engines built are purchased by commercial boat owners because these men whose income depends on steady service from their boats know that the Regal cannot be excelled for reliability and long life.

Write today for complete catalog and prices.

REGAL GASOLINE ENGINE CO.
74-82 W. Pearl St., Coldwater, Michigan

It Pumps While You Are Away

All Day, All Night, All Week
a faithful guardian

THE MILLER

- - Wave-operated - -

BILGE PUMP

is on the job, ridding your boat of rain water and leakage.

Smelly bilge water, oily and dirty, no longer will slosh around, ruining carpets and locker duffe, and leaving streaks on interior woodwork. Every little motion of your moored boat, caused by wind or wave, works the pump.



Patent applied for

SIMPLE — STRONG — SUPERSENSITIVE—AN INSURANCE AGAINST SUD-DEN LEAKS.

Size No. 1, for boats up to 20 ft.—\$5.00—wt. about 5 lbs.
Size No. 2, for boats up to 30 ft.—10.00—wt. about 9 lbs.
Size No. 3, for boats up to 50 ft.—15.00—wt. about 12 lbs.

Sent direct to you by parcel post on receipt of the above plus parcel post charges for the given weight.

E. G. LONG COMPANY
Manufacturers

Room 1361 50 Church Street, New York City

Yard & Shop

(Continued from page 102)

A Powerful Siren

A sound producing device, particularly suited for boat use, is the Federal Siren, made by the Federal Electric Company of Chicago. This horn produces a loud penetrating and distinct signal. There are no vibrating parts to wear out, or diaphragms to be replaced. There is no adjustment whatever necessary, as the electric motor will drive this siren for indefinite periods without any trace of wear. The bearings on the machine are large and equipped with oil cups, so that it requires attention only once or twice a year to keep it in order. They have been used as standard equipment for boats in the United States Navy since 1916.

Gasoline Helps the Sportsman

A western sportsman, John Edwin Hoag, Los Angeles, well-known tourist and writer, recently worked out a rather unique way of transporting a newly purchased Evinrude boat and Evinrude motor from his home in Los Angeles, Calif., to his summer place at Balboa Bay—a distance of fifty miles. He borrowed a two-wheel trailer from a neighboring contractor and then hitched the trailer to his Harley-Davidson motorcycle and side car. The boat was securely tied to the trailer and the Evinrude motor was placed in the side car. The ample power of the motorcycle, plus good roads most of the way, made the fifty-mile trip a quick, easy jaunt and saved the owner between fifteen to eighteen dollars, which would have been the hauling cost by truck.

F. S. Nock's Yard Is Busy

Many new boats are under construction at the boat building yard of F. S. Nock, East Greenwich, R. I. Among these are the 40-foot yawl Amrita, being built for Robert Saltonstall, from designs by John G. Alden. She is to be equipped with a model F Scripps engine for auxiliary purposes. Rhoda is a 60-foot off-shore cruiser, powered with a six cylinder Sterling Trident engine. She is fitted with auxiliary sails and is being built for John R. Dennis of Providence. Several smaller boats including tenders of 15 and 21-feet to serve larger craft are also in the works. Ralph Pulitzer of the *New York World* has already received his 53-foot twin screw fisherman type boat which is powered with two six cylinder Sterling Dolphins. Another 36-foot open fishing boat supplied with a six cylinder model E Scripps is also almost ready for delivery. A 21-foot tender for Colonel Joseph E. Fletcher to serve the 140-foot yacht Juanita is practically complete and its 16 h.p. Kermath engine is expected to drive it along in good shape.

Dependable Gear Pumps

The bronze geared pumps of the M. L. Oberdorfer Brass Co. of Syracuse, N. Y., have gained a great reputation among motor boat owners for their dependability under all sorts of conditions. With simple working parts that never corrode or rust because of bronze construction throughout, these pumps in many cases outlast the engine itself.

The cooling and lubricating of internal combustion engines must be very efficiently done to insure smooth action. Oberdorfer Pumps insure positive pressure, lifting power without priming and a flow of liquid in exact proportion to the speed of the engine.

Marine Motors in the Philippines

American marine motors are practically supreme in the Philippines, according to a report to the Department of Commerce from Trade Commissioner John A. Fowler. The high cost of operation is not a strong factor against the sale of American engines, but an economically operated kerosene engine up to 15 horsepower which would start by a blow torch or gasoline would be a decided advantage to the trade Mr. Fowler believes.

There is a growing market for marine engines, but motor boats are very little used for strictly pleasure purposes. The prospect for outboard motors is not encouraging and they are now used only to a very limited extent. Machinery dealers are averse to handling this type of motor because the original sales are in small money units and the spare parts business is regarded as a nuisance.

It is generally felt that when the political situation clears sufficiently to allow business to return to normal conditions for a period of years a very important market for marine engines will develop in the Philippines.

Motor boats will find small sale for the reason that the native woods are more suited to the classes of boats needed and there are numerous skilled boat builders in the country who know the peculiar needs of boats for use on the various rivers and harbors.

Only Elto

Designed and Built by Ole Evinrude

GIVES YOU All These Valuable Features

This year you surely want an Elto Outboard Motor. Nothing else will add so much pleasure and satisfaction at so little cost. When you want to speed out to your favorite fishing spot, or when you want to cruise restfully around lake or stream—when you want to visit friends, go shopping, take in the movies or a dance at the pavilion, your Elto will always be ready. And this new Motor of Ole Evinrude's is so towering in its advantages, you will be satisfied with nothing less in an



Designed by Ole Evinrude



3 H.P.

Fastest Light Twin

Outboard Motor.



Easy to Carry
Lightest of all Motors for its power. Less than 17 lbs. per H. P. Most compact, balances in hand for easy carrying.



Greater Speed
With an Elto, you always set the pace. You never trail. Greater power plus stream-line design, give matchless speed—as proven by national and international races.



Fits Carrying Case Without Taking Apart
Rudder folds back and locks, to form most compact package. Slips into handy carrying case without taking Motor apart.



Instant Easy Starting
"The Motor that Starts with a Touch." No cranking. No spinning. No awkward rope pulling, because equipped with Atwater-Kent Uni-Spark ignition and Columbia waterproof Hot-Shot Batteries. Remember magneto starting is not easy starting. All automobile makers use battery starting—so does Elto.



Safe Rudder Steering

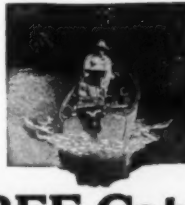
No tiresome, cramped position. No sudden reversing of Motor to endanger boat passengers. Steers easily from any part of boat, or self-steers in straight course, leaving both hands free. Safe in rough waters. Perfect landing control after Motor is shut off.



Extra Long Life
Because of larger bearings—stronger shafts. Full-length cast aluminum shock-proof frame protects propeller shaft. Never breaks or gets out of alignment. Gears always held in correct mesh.



More Power
50% More Power. Full 3 H. P. "Bucks" the rough seas safely. Pulls its load in any type of boat, easily and speedily.



Propello Pump

Propeller pressure keeps water circulating. Ends all water pump troubles. Not a single moving part. No valves to stick. No parts to wear. Cools Motor perfectly in muddy, sandy or salt waters. Never clogs.

Do not confuse the Easy-Starting Light-Weight Elto Twin with any other Outboard Motor, as for 10 years, Ole Evinrude, founder of the industry, has had no connection with any other Outboard Motor Company. The Elto is built in his own factory, under his personal direction.

Write for FREE Catalog Today!

This year you will see Eltos everywhere. Advance orders exceed all records. Thousands are turning to the Motor which not only gives more speed and power, but which Ole Evinrude's genius and long years of experience have made free from starting troubles, free from pump troubles, easier to carry and much more durable. Have an Elto demonstration—then decide. Write for Free Catalog today.

ELTO OUTBOARD MOTOR CO.

Dept. F

OLE EVINRUDE, President
Manufacturers' Home Bldg. Milwaukee, Wis.

ELTO OUTBOARD MOTOR CO.
Dept. F, Manufacturers' Home Bldg., Milwaukee, Wis.
Gentlemen:—Send me complete catalog describing the 1924 Elto Outboard Motor.
Name.....
Address.....

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Proof that the right power Plant for YOUR boat is the

BRENNAN

STANDARD

regardless of size or type, whether used for pleasure, fishing or commercial service.

BRENNAN Standard Motors are known from coast to coast and have been the acknowledged leaders in the marine field for more than a generation. Our line is the most complete offered by any marine engine manufacturer, ranging in sizes from 17 to 100 H.P., is furnished complete in every detail—no extras required.

Extracts from a
Few Recent Letters



35½ x 9½ cruiser owned by J. A. Coward, powered with M-4 17-20 H.P. motor, speed 10 m.p.h.

Gentlemen: With reference to the model M, 17-20 H.P. motor which I purchased from you last March. We have given this motor some long, hard runs, such as fourteen day trips at a time, and have never had to touch the motor, all that was necessary was to push the button and the motor started.

We have also used this motor for our blue and codfishing in the Atlantic Ocean in very rough weather, and the motor never missed once.

For example, we have taken runs to Fire Island and back by the way of Great South Bay, a distance of about sixty miles, and we never looked at the motor on the entire trip.

Yours truly,

(Signed) J. A. Coward.

Since writing the above letter, Mr. Coward has purchased one of our D-4 motors.

"The motor runs fine, and we could not wish for a better running power plant."

W. C. Blackburn.

"Very much pleased with the performance of the Model M-4 Motor installed last June. It is a very quiet motor, powerful and above all, FREE FROM VIBRATION, which is a wonderful asset in a marine motor."

H. W. Henry.

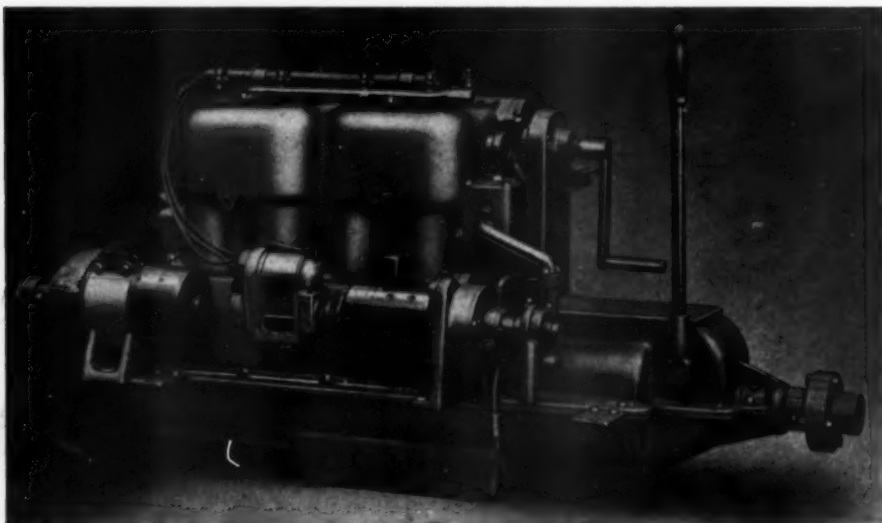
BEFORE YOU BUY—WRITE BRENNAN

A few of the many unusually good and exclusive Brennan features are: an oil cooler and filtering device, a method of preheating the cooling water before entering the cylinders, a hot-spotted manifold construction, a two unit Bosch electric starting equipment, an emergency rear starter, reverse gear having reverse speed the same as the forward, high pressure lubricating system thru a hollow crank shaft.

Designed for double ignition—Bosch high tension magneto or Atwater Kent—both systems furnished when desired at a slight additional cost.

Valve mechanism completely enclosed. There are four hand hole plates—two on a side. Bearings, 2½" in diameter.

Below is our New Model D-4 Medium Duty 25-35 H.P.



BRENNAN MOTOR MFG. CO.

500 E. WATER STREET.

SYRACUSE, N. Y.

Cable address "Binot"

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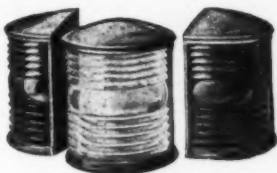
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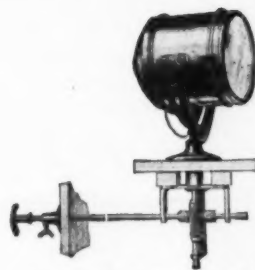
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WRITE FOR 1924 CATALOG

When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York



THE VENTURE—Mr. Harry Hammond, Owner, winner of the 35-mile cruiser race in the Palm Beach Mid-winter Regatta.
 THE SALLY—Mr. Florenz Ziegfeld, Jr., Owner, which was second in the race.
 THE INTERNATIONAL 6-METER RACERS, were many of them painted with Marblehead Green.

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Buffalo Regatta Taking Shape

The Regatta Committee of the Buffalo Launch Club is hard at work on its program for the Annual International Regatta to be held at Buffalo on August 14 to 17. The course selected for the races will be five miles in length, with a turning mark at each end. The upper one being off Riverside Park, while the lower turn will be just below the Buffalo Club's dock with 2½ miles between the marks. The races to be held are sanctioned by the American Power Boat Association, and will be run, one heat each day with the awards made on a point system. The first race daily will be for the Interstate Trophy presented by the National Association of Boat and Engine Manufacturers. Boats competing for this trophy must have minimum dimensions of 25 by 5 feet, and be powered with marine engines, not exceeding 625 cubic inches. The length of each day's heat will be 25 miles, and the races will start promptly at 2 P.M. Wilgold II, Miss Mary, Maradon, Bear Cats and Baby June have all promised to compete.

The second event each day will be a 50 mile heat for the \$5,000 Fisher Gold Trophy. This event will start at 3 P.M. and will be restricted to boats at least 32-feet long, with a maximum displacement of 1,075 cubic inches. Commodore Humphrey Birge, who now holds the trophy, as a result of his success with Nick Nack, will defend it with Nick Nack II, which is powered with a 250 h.p. Hall-Scott marine engine. Commodore Eagan, who also has a leg on this trophy, will also take part with Rainbow. Other fast boats which have promised to compete are, Sayonara, owned by Addison Vars; Ionic, owned by Colonel T. A. Duff; Miss St. Lawrence, owned by Dr. George H. Stephens, and others. It is rumored that Webb Jay of Chicago, who now has two legs on this trophy will build a new boat and try to make this trophy a part of his permanent collection.

The third event each day will be a race of 20 miles for the George Leary, Jr. Trophy. This will start at five o'clock, and will be for hydroplanes with a minimum of 20-feet length, and a maximum engine displacement of 1,100 cubic inches. Commodore Grimm, owner of Miss Peerless, has already agreed to defend the Trophy, having won it on two previous occasions. Should he be successful, the Trophy will become his permanent property. Commodore Sidway will bring Arab VII and Ross Miller will bring Miss Buffalo. In addition, many of the fast Mississippi Valley boats are expected to come on and try the waters of the Niagara.

For a final wind up event, the Club has planned for August 17, a big bang-up race that will be the outstanding feature of the year's racing. This will be the Buffalo Launch Club's \$5,000 Sweepstakes Race. The start will be at two o'clock, and the distance 100 miles. Boats for this must have a minimum of 25 by 5-feet and a maximum engine displacement of 1,075 cubic inches. Other restrictions and requirements are still under consideration, and will be made public at another time. In general, however, the conditions will be similar to those used for the Gold Cup class. While the Prize division has not been definitely settled, it is believed the first prize will be \$2,000 in cash or merchandise, and the remaining \$3,000 divided among the next seven or nine boats to finish. It is expected to have at least twenty boats in this event. The plans for this entire Regatta are going forward with great enthusiasm, and it is apparent that these races will be among the most successful of the entire summer racing season.

U. S. N. Boat Clocks

For some time past, the Navy Department has been selling surplus material, which has consisted in the main of equipment for larger boats, not exactly suited to small boat purposes. Recently, however, the E. J. Willis Company of New York, bought a large quantity of Chelsea, Waltham, and Seth Thomas heavy cast brass clocks in three different sizes, viz., 3½, 4 and 6 inch. While these clocks are not of the striking variety, they are wonderful time pieces. The test for them consisted of alternate heat and cold daily for one week. If they gained or lost a half second, they were rejected. These clocks are all new and direct from the Observatory at Washington, and the price at which the Willis Company is selling them is astonishing. This company has issued a new booklet containing over one thousand items of surplus Navy material which is useful on a boat. Copies of it will be sent to any yachtsman or dealer on request to the E. J. Willis Company, 85 Chambers Street, New York, N. Y.

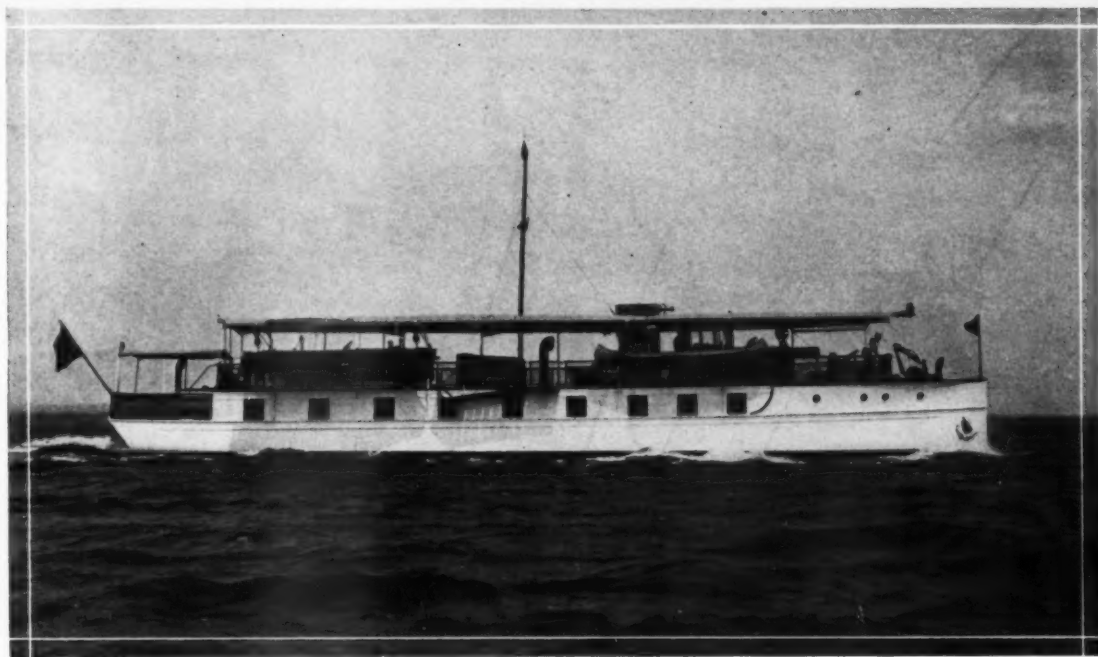


Photo Edwin Levick, N. Y.

Yachting Adventures Are Bounded By Engines

There are yachtsmen unafraid to leave sheltered water ways and go out alone over the horizon—who do not hesitate to sail close by a cape well known for a strong running current—who cruise up a river far from a repair shop and run through a rising sea with peace of mind—because of their confidence that their engines will serve with perfect continuity.

That is the assurance carried by each yachtsman whose craft is equipped with Wintons. Greater adventures are theirs—and cruises that might be called daring for some other boat.

"Palmetto," owned by Walter L. Preston and measuring 89'7" x 17' x 3'3", is another Winton equipped pleasure craft that goes where her fancy suits. She was designed and built by the Mathis Yacht Building Co., Camden, N. J., and is powered with two Winton Model W6 gasoline engines of 6 1/2" bore x 9" stroke, developing 80 H. P. each. Her auxiliaries are also of Winton make, consisting of a Winton 5 K.W. generating set—and pumping equipment.

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The Official Program

The Main Sheet, which is the Club publication of the D. Y. C., will serve as the Gold Cup Regatta program. Fifteen thousand copies will be sold during the Regatta to motor boat enthusiasts. As this year's program, it will be an unusually fine souvenir approximating 100 pages. It will prove a most desirable medium for motor boat advertisers. For particulars regarding advertising space or other information address:

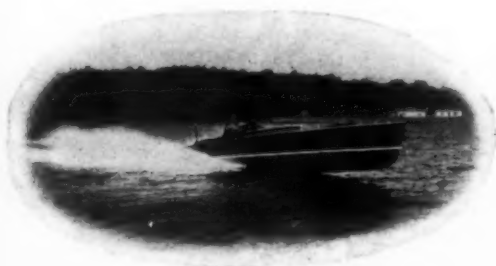
THE MAIN SHEET

HOTEL ADDISON
DETROIT, MICH.

The Detroit Yacht Club Invites You

To visit Detroit and witness the Eighth Annual Gold Cup Regatta, August 29th to September 1st, in which the fastest runabouts will compete for the A. P. B. A. Gold Cup, the Duff-Greening Trophy and the 150-mile Y. A. A. Sweepstakes. The Gold Cup Regatta annually attracts more motor boat fans than any other power boat event in America, its four days will be packed with competition, including seven major races. The world's greatest Yacht Club extends this invitation to every yachtsman to come and see this, the greatest of speed spectacles.

A. A. Schantz, Commodore.



August 29-30-31, September 1

1

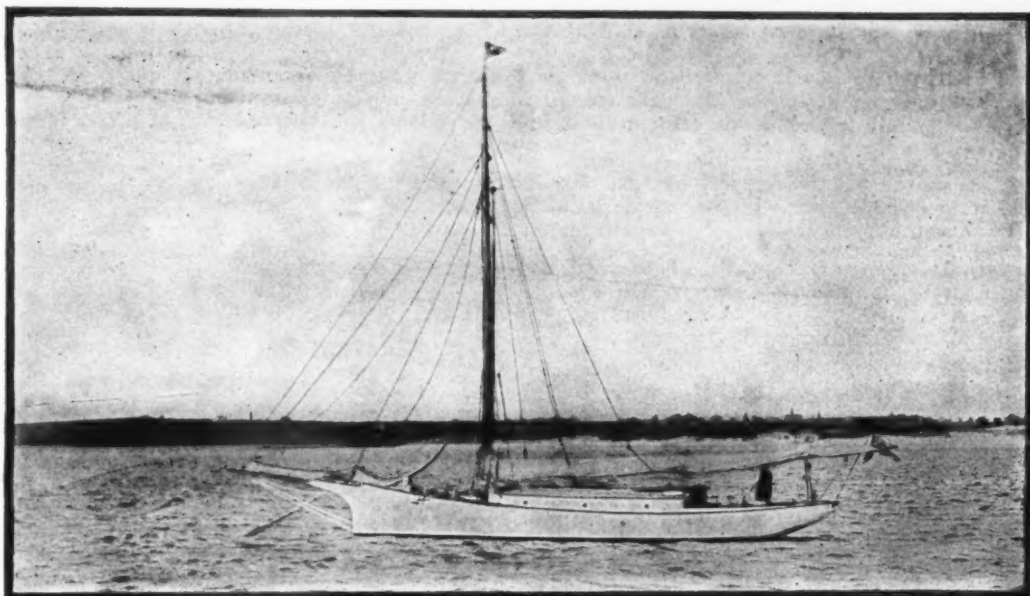
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2

4

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This is Judge Morton's second Frisbie.

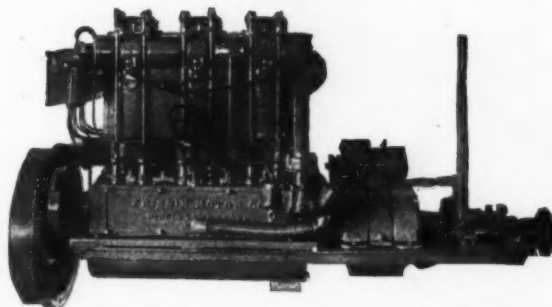
Almost any motor will give good service for the first season; but it's the year-after-year satisfaction that makes the "friendly" Frisbie a motor that men like to tie to.

Frisbie Motors are now made in 14 models ranging from 5 to 185 H. P. Complete information gladly sent on request; also our recommendations for the particular service you have in mind.

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The attractive runabout shown above is the 26' x 6' 6" "Scotia," built by Louis E. Follmer, Cedarville, Mich. for Dr. C. T. Pearse of Cincinnati, Ohio. A Kermath 50 drives Scotia about 25 miles an hour and has proved so satisfactory that it has brought Mr. Follmer orders for several duplicate runabouts.

WHEN you want to buy a motor boat, don't look for a fancy showroom on Automobile Row; go down along the water and look up the shop of a man who builds boats. He is in business to help you and his advice is cheerfully given whether you buy a boat from him or not.

There are more than three thousand local builders throughout the country; this is the service organization of the marine industry. The builder is an expert who can save you a great deal of trouble and money if you will let him.

The manufacturers of Kermath Engines will be glad to direct you to a good boat builder if you don't know where to find one.



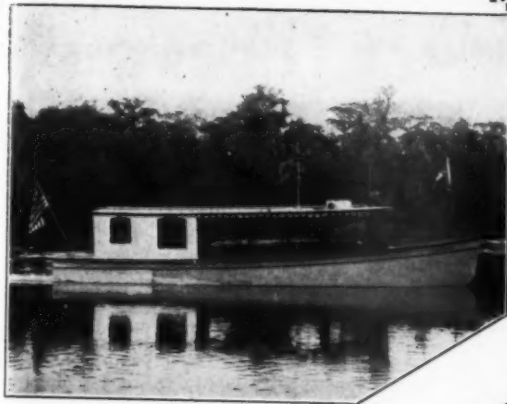
"Mary Jane," a 50' x 12' passenger boat built by Sandusky Boat and Cabinet Works, Sandusky, Ohio, for use on Meyers Lake, Canton, Ohio. Driven by a 25 H.P. Kermath engine and seats 150 persons. Mr. John Bast, the owner, states that he took in 69,023 paid fares with this boat during the summer season of 1923.

KERMATH

Thousands of amateurs all over the country have built their boats from knock down frames supplied by the Brooks Boat Co., Inc., Saginaw, Mich. Many of them are powered with Kermath engines.

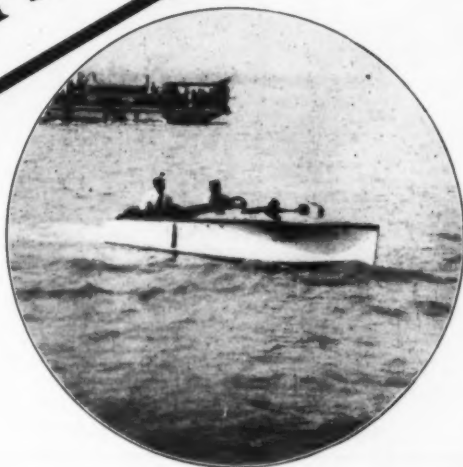
Below is one of these Brooks Boats, a 30 ft. cruiser, built by Mr. A. D. Ross of Newburyport, Mass. A little 10-12 H.P. Kermath drives it over 10 miles an hour.





A typical Florida river boat, built by E. H. Glover, Holly Hill, Fla. for Major J. B. Steinmetz, Apopka, Fla. It is 38' x 8' with about 20" draft and is driven by a pair of 16 H.P. Kermaths.

The Boat Builders' Favorite

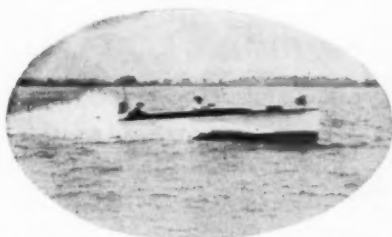


A 21 ft. runabout built by Barteau Boat Works, Chicago, Ill., and owned by Mr. F. L. Moore of Chicago. Powered with the famous Kermath "Vanadium" 20 which has proven thoroughly dependable in the rough waters of Lake Michigan.

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The Bryan Boat Works, Wyandotte, Mich., are proud of this runabout because it is very shallow draft (15") and makes 17 miles an hour with a Kermath "Vanadium" 20—really a remarkable speed for a 23' x 5½' shoal draft boat with a comparatively small engine. The hull is a round bilge type with a pronounced tunnel stern.

The Bryan Boat Works also builds the standardized 23 ft. V-bottom runabout shown below, which does 27 miles an hour with a Kermath 50 or 18 miles with a Kermath 20.



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BROOKLYN, N. Y.
 Detroit Chicago San Francisco



Periwinkl, a Wholesome Cruising Craft

(Continued from page 33)

hardwood false keel, or a metal shoe, otherwise it will not stand the wear of grounding. Spruce is an excellent material for boat building purposes excepting for planking; here its propensity to swell and shrink is too great, and this is especially so if the planking is light as shown on these plans.

The stem is to be built up from three pieces of yellow pine sided $2\frac{3}{4}$ inches, there is little use in making this heavy, if the head is left moulded $3\frac{1}{2}$ inches, the place where the chine intersects 5 inches, and 6 inches at Station 1, there will be plenty of wood to hold fastenings and ample strength. The cut water should be left $\frac{3}{4}$ inch in width and shod with a half round brass stem band. The parts of the stem should be fastened together with $\frac{1}{4}$ inch galvanized iron bolts, heads countersunk in the cut water and the nuts inside. There should be a scarph at least 14 inches long between the keel and the stem, this must also be fastened with $\frac{1}{4}$ inch diameter galvanized iron bolts; three should be ample. It must not be forgotten that stop waters must be inserted wherever parts of the stem and deadwood are under water, otherwise water will find its way along the joints. Stop waters are white pine dowels, and are put in across the seam so as to dam it to the passage of water. The position of these are shown on the plans.

After the keel is made and set up the frames should be built up. Perhaps I should have mentioned before that the easiest way to build any boat is to go about it in the professional way. This means that the lines must be layed down on a convenient floor to full size. At first this may seem an arduous job, but it really simplifies the work and the day or so required for this preliminary work is well spent. Forms as usually made for the building of a boat will not be needed as the frames in this boat remain in the craft. These are to be made of $1\frac{1}{2}$ by $2\frac{1}{2}$ inch yellow pine or white oak and are set on 1 ft. 10 inches on centers. At the corner of the chine the side and bottom frames are secured by a $\frac{7}{8}$ piece of oak as shown. At the keel the frames are secured by a $1\frac{1}{2}$ inch thick yellow pine floor timber; notice that both the floor timber and the corner block are fitted on the forward face of each frame. I should use galvanized iron screws for the fastenings here, these should be No. tens 2 inches in length, and let through the oak block and screwed into the frames. The upper ends of the frames must be connected with a temporary member about the same dimensions as the deck beams. It will be better to cut the notches for the seam battens and the chine pieces after the frames have been set up as the work of planking progresses. Care spent in setting up the frames, making sure that each is both square across the keel and plumb, will assure a fair sheer line and make both sides of the boat alike.

It will be noticed after studying the plans that the side planking is laid fore and aft of $\frac{1}{2}$ inch white cedar in five strakes. Battens will be needed behind these seams and these should be about $\frac{1}{2}$ by 2 inches of white oak. The chine log is let into the frames as shown and is not of the rabbeted type. Also you will notice there is an inwale of $\frac{3}{4}$ by 3 inch yellow pine let into the frames along the sheer, this serves two purposes; one as a nailing piece for the decking, the other as a permanent batten along the sheer. The clamp should be put in under the temporary deck members; it is to be yellow pine $\frac{7}{8}$ by 3 inches. A boat of this construction should be built right side up. The side planking applied and then the permanent deck frames put in. Thus the structure will be well secured and the craft can be heeled down or turned bottom side up to facilitate laying the planking on the bottom. The clamps, inwales, and chine logs should be through bolted with $\frac{1}{4}$ inch galvanized iron bolts. The deck beams are fastened with long galvanized iron nails, one nail into the clamp, another into the frame head.

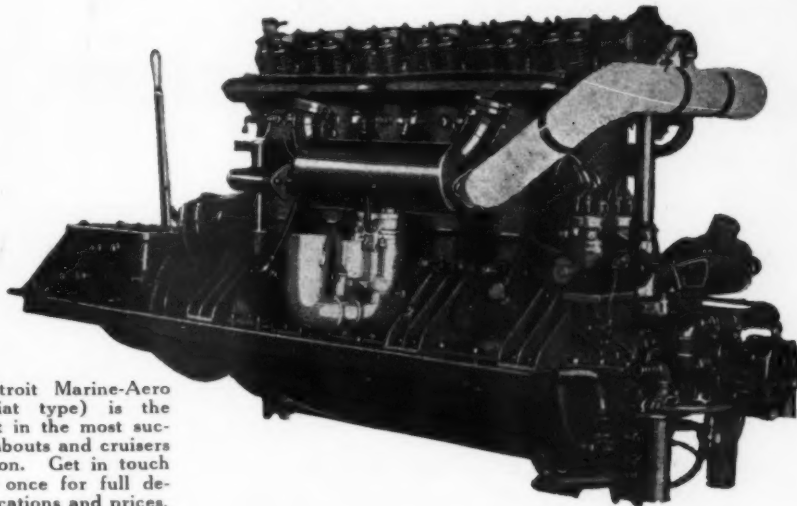
The bottom planking is laid diagonally with the seams leading aft from the keel and apron piece. The planks should be about 6 inches wide and $\frac{7}{8}$ inch thick and of white cedar. The width of these is not important and they need not all be alike. The seams should have a slight outgate so as to take caulking, but make sure the inside of the seam is fitted tight otherwise the caulking will drive through. I should fasten the entire bottom with galvanized iron screws, using No. tens about $1\frac{1}{4}$ inch long. The heads should be let in and covered with wooden plugs. Wherever wood surfaces come together paint with red lead or liquid marine glue, the glue is the better, I believe.

The deck is to be $\frac{3}{4}$ by 8 by 3 inch tongue and groove spruce or white pine, any other light weight wood can be used if desired, but do not lay a heavy deck. A lot of unnecessary weight is useless in this kind of boat. She is designed to be buoyant and the upper works especially must be light. Boat nails will be suitable for deck fastenings with the heads punched slightly

(Continued on page 126)

Speed--High Power--Light Weight--Low Cost Fuel Economy--Extreme Dependability

High Speed
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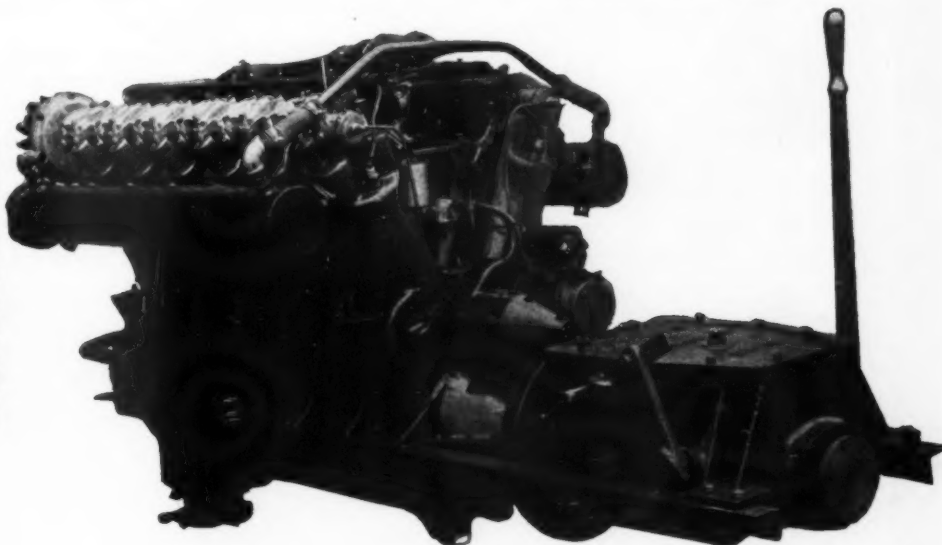


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Massive, three-bearing, Chrome Nickel Steel crankshaft.

Largest bearings of any motor its size.

End play adjustment for crankshaft — the only Marine Motor so equipped.

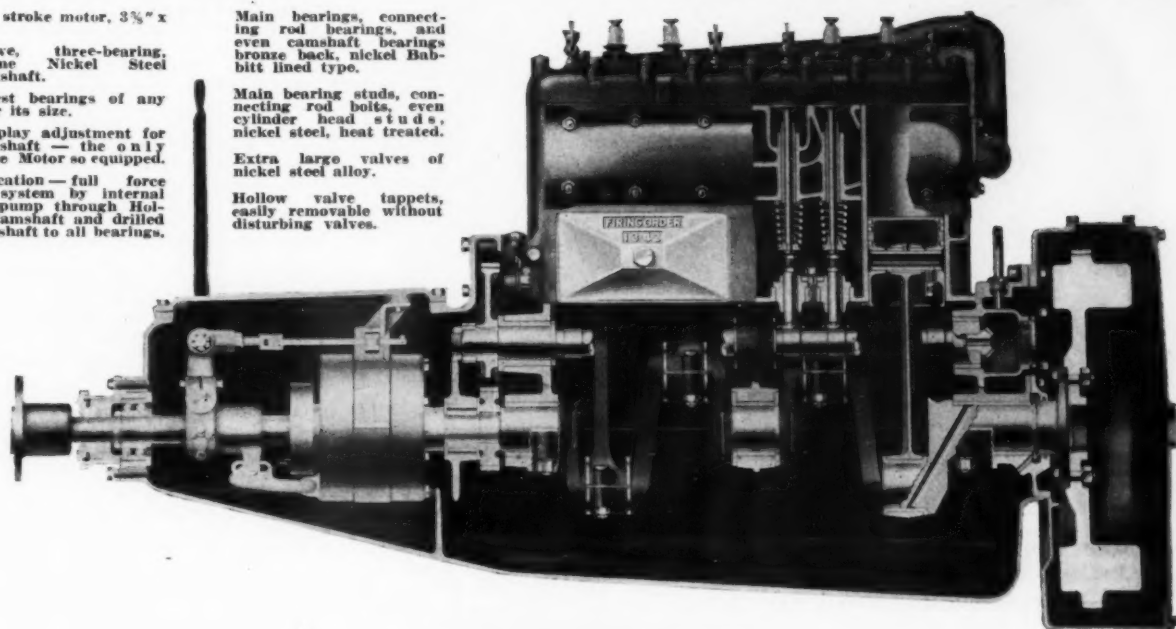
Lubrication — full force feed system by internal gear pump through Hollow Camshaft and drilled crankshaft to all bearings.

Main bearings, connecting rod bearings, and even camshaft bearings bronze back, nickel Babbitt lined type.

Main bearing studs, connecting rod bolts, even cylinder head studs, nickel steel, heat treated.

Extra large valves of nickel steel alloy.

Hollow valve tappets, easily removable without disturbing valves.



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20-35

INSIDE, all the newest and best ideas in motor engineering, combined and coordinated into a design that embodies in perfect balance the various features that make an engine powerful, economical and dependable.

Outside, a clean cut engine, handsomely finished, with every moving part enclosed and every adjustment accessible for easy maintenance.

If your runabout or cruiser needs a medium speed or high speed engine developing 20 H. P. at 800 R. P. M., up to 42 1/2 H. P. at 2100 R. P. M., don't neglect to get the full specifications and price of this wonderful new ERD.

Write today for details. Excellent opportunity for dealers and boat builders in open territory.

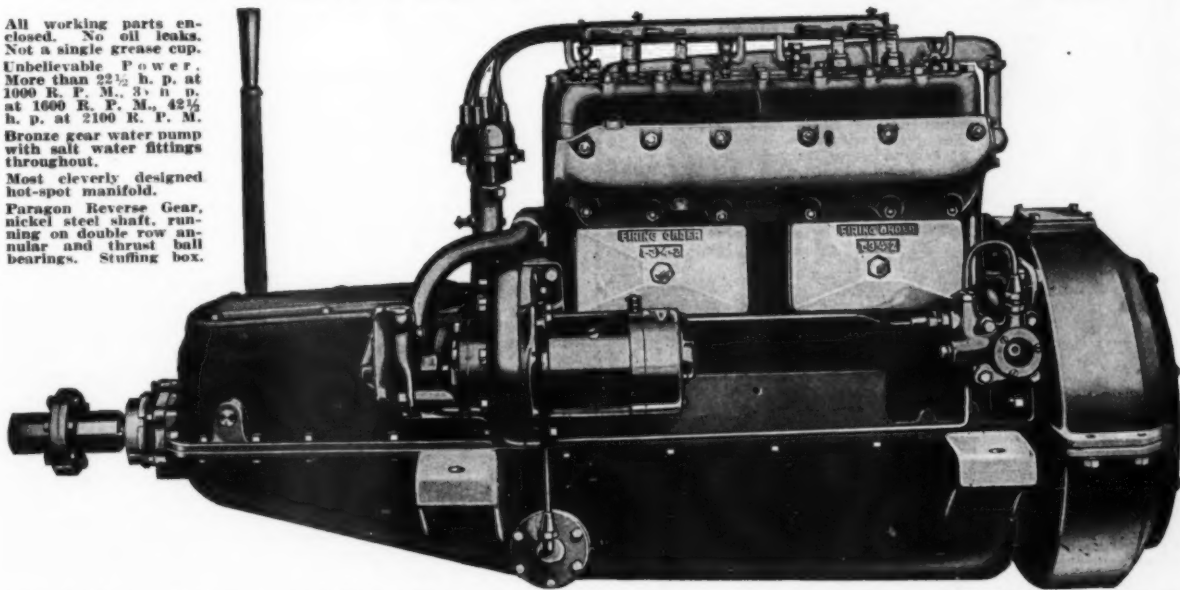
Other ERD Marine Engines, 5 H. P. up.

ERD MOTORS CORPORATION, SAGINAW, MICH.

All working parts enclosed. No oil leaks. Not a single grease cup. Unbelievable Power. More than 22 1/2 h. p. at 1000 R. P. M., 31 h. p. at 1600 R. P. M., 42 1/2 h. p. at 2100 R. P. M. Bronze gear water pump with salt water fittings throughout.

Most cleverly designed hot-spot manifold.

Paragon Reverse Gear, nickel steel shaft, running on double row annular and thrust ball bearings. Stuffing box.



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Periwinkl, a Wholesome Cruising Craft

(Continued from page 122)

below the surface. Eight ounce duck will cover the deck and so it is not necessary to caulk or putty the seams. The surface should be planed smooth and fair but it is not necessary to finish it like the sides or bottom.

Around the deck there is a rail. This adds a professional touch to the job that the amateur usually neglects. This rail should stand plumb rather than with the flare of the top sides: it is not difficult to fit and sets the sheer off to fine advantage.

The cabin sides and coaming should be in a single length but if a long piece of cypress is unobtainable a butt can be made at the after end of the house and the joint covered with a strip of 1/16 inch brass. The building of the house should not be troublesome since the sides are but 7/8 inch thick and there is very little sweep to the sides. The forward corners can be made just as these are in a box, and then fit a filler piece inside to give additional strength. The deck carlins should be made 1 1/2 by 1 1/2 inch square. The ends are to be let into the sides and covered with the top canvas and the half round moulding around the edge of the top. The cabin top is laid with the same kind of material as the deck and fastened in a similar manner.

The cockpit well hangs from the deck beams on three 3/4 inch diameter rods each side, these are threaded both ends and after the well is made are set up tight. Two 1 1/2 inch scuppers must be fitted in the after corners of the well so as to carry off water: lead pipe should be used for making these.

There are so many separate operations needed in the building of any boat that is impracticable to attempt to cover them all in a single article. The best one can do is to cover the principal points and leave the others to the ingenuity of the builder. I want any of you to feel that you can write me any time for information or advice in connection with the building or outfitting of Periwinkl. If a set of blue prints of the original drawings of this boat will help in the construction, these are available at a nominal cost by addressing F. W. Horenburger, 4263 Byron Ave., Bronx, N. Y. These drawings are to a scale of half inch to the foot, and are possibly a little more legible than the reproductions published.

Now we must take up the cabin. In so small a craft a separate toilet room wastes space and is not desirable. As shown the toilet is installed under the tail end of the double forward berth. It is here out of the way and yet convenient; a curtain can be hung across the cabin trunk which in the simplest way divides the cabin and thus gives privacy to the toilet. The bunks are all big and there is plenty of room above them for air and comfort. With the motor entirely hidden under the bridge deck the cabin is clean and open with more than plenty of sitting room, despite the moderate headroom under the carlins of 4 feet 10 inches. Don't increase the height of the cabin or the freeboard, this will result in a high sided looking craft and destroy the balance of the whole thing. Don't change the plans anyway excepting in minor details inside the cabin. Changed plans are little better than no plans at all, and since I have put a whole lot of thought into this boat why spoil her? The galley is big enough to be practical and with its sink, ice chest (which is to be built in under the drain board) stove and lockers is something more than a tiny nook in which to prepare meals.

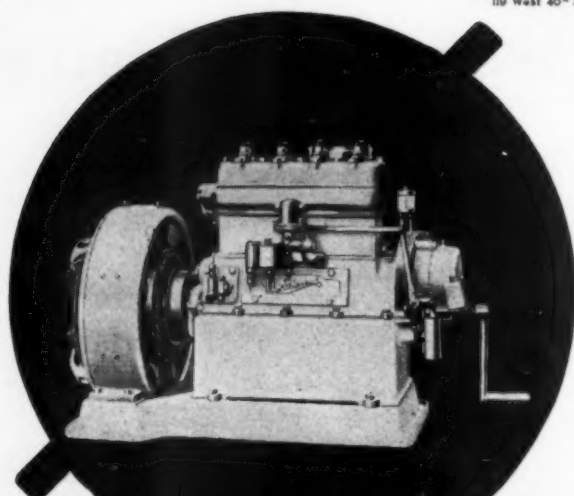
Since I am a firm believer in some kind of sail to use in an emergency I have laid out a sail plan that is both practical and easy to handle. One halyard and one sheet controls the lug sail and while it is hardly expected that Periwinkl will dash up to windward she will move along with a free breeze and a lot of fun and rest can be taken with the motor shut off and the sail spread.

Not knowing the kind and size motor that will be installed I have not specified a suitable propeller. Just drop me a line when you have decided on your motor and I will, post haste, set you right on the subject.

The cost of building Periwinkl will depend upon the locality in which the builder lives, the type of motor installed, the woods used, and the way the boat is finished and fitted. She can be built without a motor and its accessories for \$1250.00 near New York. Motor and equipment would be perhaps as much as \$400.00 which would make the finished job cost about \$1650.00.

A Universal Shaft Log

A fitting which can be bolted into place providing a water tight shaft bearing is made by the Hubbard Erickson Company, Chicago, Ill. The feature which makes this possible is a ball joint in sliding plates permitting a change of angle, and also a lateral adjustment.



Illustrating Universal 4 K. W. Electric Plant—next size larger than Universal-Unimote 2 K. W. A favorite for marine installation.

Wanted--a Job

"BROTHER am I to the famous marine motor—UNIVERSAL. Four cylinders give me a quiet and smoothness that hides the strength in my muscles. I am husky where it counts—won't wince when you ask me to do three or four jobs at the same moment. Out on the high seas—down in the heat and cramped quarters of many a cruiser's engine room—I work in an odd corner and think nothing of it. Ashore in camps, in school's, in country homes and farms—I bring the comfort of electricity. I reach out to the landing pier and guide home those tempted to the water. I curl the maiden's tresses, toast bread for breakfast, press the wrinkles out of suits and dresses and power such things as water systems.

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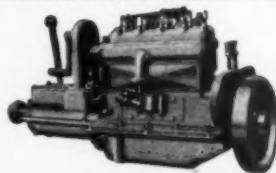
UNIVERSAL MOTOR COMPANY

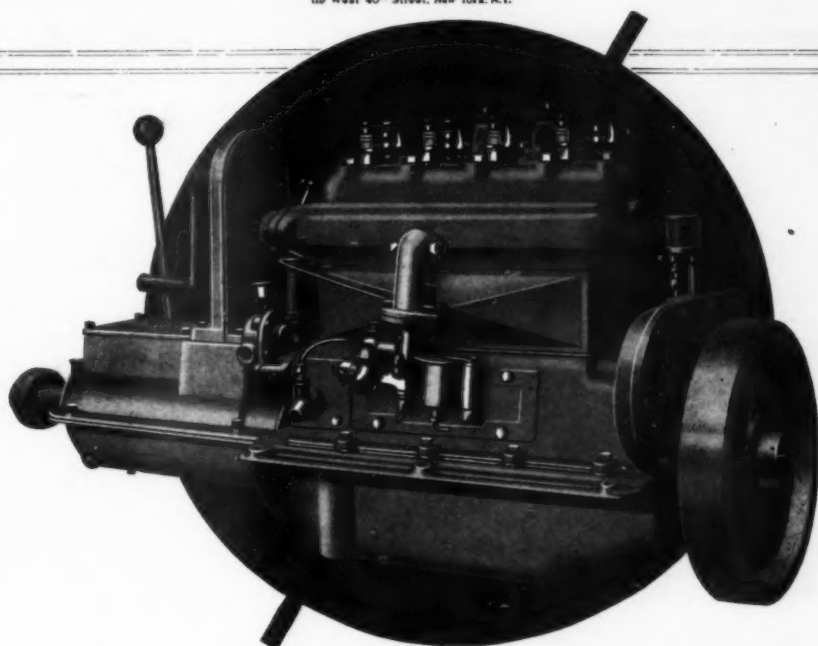
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ELECTRIC PLANTS

Also makers of the famous Universal 4-cylinder, 4-cycle, 9-12 H. P. Marine Motor—"standard of the world for boats under 50 feet." Write for catalog, mentioning size and type of boat you now own or are planning.





You'll Be Proud to Lift the Hatch!



THERE'LL be no excuses called for when you display your Universal motor to boat-fan friends — nor apologies when you open the throttle!

Universal has added to a world-wide reputation for rugged reliability, an exterior in keeping with its inner excellence.

A beautiful job — snug, clean-cut, accessible! But best of all, a motor whose performance, season after season, gives you the rare feeling that, whatever else may happen, you can be certain of your power plant.

That's the secret (if it be a secret) of Universal's acknowledged right to the title, "world's standard for boats under 30 feet." Sane, time-tried principles of construction, unchanged but for refinements of value, have won it that position.

Write for catalog, mentioning size and type of boat you are planning. Universal's reasonable price will surprise you. Atwater-Kent igniter or Bosch magneto — self-starter as you wish.

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MULLINS Steel Boats eliminate practically all cost of up-keep, and are completely free of all the defects of wooden boats. Each model of MULLINS Boats is built of puncture-proof steel and equipped with air-compartments that make them leak-proof and non-sinkable.

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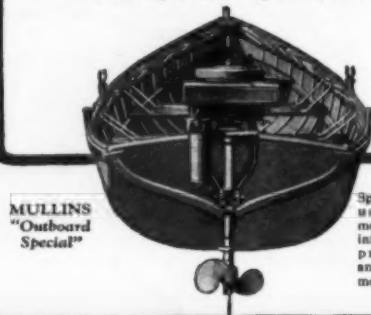
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Boat Dept., 820 Depot St., Salem, Ohio



MULLINS
"Outboard
Special"

Specially designed for use with outboard motors. Its strong, reinforced construction prevents vibration and does not allow the motor to work loose.

Huck Says

(Continued from page 26)

stories to the sidewalk with painful and possibly fatal results.

If all this doesn't happen, and your landlord he doesn't can you by this time, you proceeds with the next plank and by the time you gets half the plank on, you thinks you is building a ocean liner. However results they only come to the perseverance and after so many months they elapse you loses count, you gets her all planked and then you proceeds to the pleasure of putting in the accommodations. You puts in the seats and the bottle locker for non-intoxicating beverages shown in the drawings and maybe you has some original ideas and puts in a shelf, for a talking machine and a radio set and if you has those instincts for self-preservation, you puts in a place for life preservers which is readily accessible. Guava it may be finished natural or she may be painted, but I notes all females, they runs strong for painted jobs nowadays and anyways a amature boat it seldom can stand a natural finish, whereas if you uses a lot of paint and putty, you kids yourself better that she floats.

After all this is done, you turns to what I heard a feller call the asthetic side. You has cushions made for the seats, you gets your wife to make a pretty silk flag for the bow staff and if you is a member of the KuKlux or the Nights of Columbus, you has a emblem of that order made to put on the bow staff, what looks pretty before she is launched and which gets knocked off the first time you comes alongside the dock.

Now your boat, it is finished or you is. One or the other. By this time you has lost ten pounds and your job but you is hilarious. When you starts to take her out if you finds you cannot get her down the stairs, I advises you to proceed as follows: Cut her in two with a saw just aft of station 3, you then nails some weather strip firmly along the edges, you fits two garage door hinges on the bottom and puts a couple of stout catches on the gunwale to hold the two parts together when in use and buys a powerful bilge pump. Put it into the back of the car, or if you has a closed car, put it onto the roof, or if you has no car, hire a truck, and drive to the nearest deep water. Invite your mother-in-law to accompany you. You doesn't have to invite your friends, because if you has any, which is doubtful, by the time you has completed the boat, they will come along anyway, together with three hundred other undesirable persons. Arriving at the dock, have Guava placed gently in the water, right side up. Then cast your eye around innocent-like as possible and let your gaze light, accidental-like on your mother-in-law. You smiles brightly, extend your hand to her and gives her the honor of being first aboard, in a ingratiating manner. You leads her gentle-like to the edge of the dock, adjusts her, if possible so she steps on the gunwale and then if you conducts yourself coolly during the next few minutes, your months of hard labor, they is not spent in vain.

Frank Pembroke Huckins

Under the Jolly Roger

(Continued from page 20)

and tackle this outfit, even if he knows he'll get killed. And that's just what will happen to him if he comes. Let poor Mac stay aboard. When we don't come back, he'll know it's all off, and if he has time to think over it he'll realize it would be foolish to try to do anything. But right now Mac's mad as a wet hen, and if we holler for help—Scraggsy, please don't holler. "Die game."

Captain Scraggs turned his terrified glance on Mr. Gibney's tortured face. Scraggs was certainly a coward at heart, but there was something in Mr. Gibney's unselfishness that touched a spot in his hard nature—a something he never knew he possessed. He bowed his head and two big tears stole down his weatherbeaten face.

"God bless you, Gib, my dear boy," he said brokenly. "You're a man."

At this juncture the king came up and thoughtfully felt of Captain Scraggs in the short ribs, while Tabu-Tabu calculated the precise amount of luscious tissue on Mr. Gibney's well-upholstered frame.

"Bimeby we eat white man," said Tabu-Tabu cheerfully.

"If you eat me, you bloody-handed beggar," snapped Captain Scraggs, "I'll pizen you. I've chewed tobacco all my life, and my meat's as bitter as wormwood."

(Continued on page 132)

And Now — Get into the Boat and see for Yourself



GO to the Johnson dealer and "get into the boat and see for yourself." He will be glad to give you a demonstration.

He wants you to appreciate the great difference between the performance of the Johnson and that of all other outboard motors.

He will ask you to run the Johnson Motor yourself (you won't need any practice or experience to do it).

And here are some of the things he will show you:

How easily the Johnson starts, under all conditions and temperatures.

How you can start it forward, backward or sideways, so as to leave the shore or dock without rowing or paddling.

How you can tilt the Johnson Motor to run in the shallowest water that will float the boat, and how the motor tilts *automatically* to clear submerged obstructions without injury to motor or boat.

How the Johnson shock-absorber drive protects the motor.

How the Johnson two-cylinder design eliminates vibration in the boat.

How quickly you can turn or stop the boat in its own length.

How every operating condition has been met by correct marine engineering principles so that you can depend on the Johnson to take you wherever you want to go—and *bring you back*.

How fast and powerful it is.

Why it is the only motor that can be used on any type of boat or canoe without altering the boat and quickly switched from one boat to another.

And *how easy it is to carry*, for with all its remarkable power, flexibility and dependability goes the only *real portability*—it weighs

Only 35 Pounds

It's an easy "one hand carry;" it can be carried on the running board of your car or packed into a suitcase that fits under a Pullman berth.

No matter what you think of detachable boat motors in general—no matter what experience you have had with them—no matter what your friends have said about them—do not confuse the Johnson Motor with any other outboard motor you ever saw or heard of.

Go to the Johnson dealer now. If you don't know him write us for **FREE** catalog and we will gladly send you his name.

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Johnson

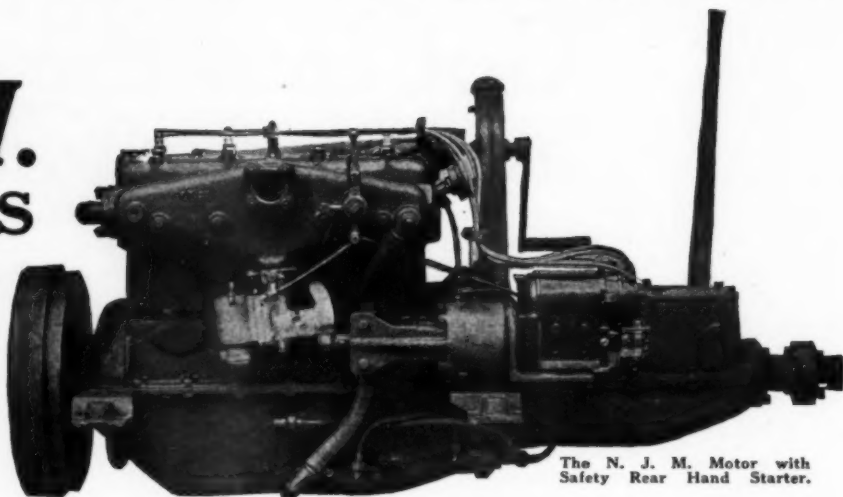
OUTBOARD MOTORS

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N.J.M. MOTORS

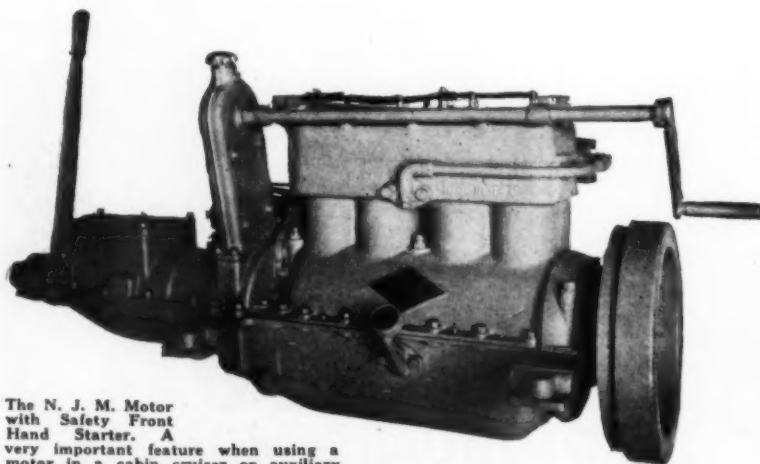


The N. J. M. Motor with
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WHEN you order a marine engine after June first you want to be pretty sure you are going to get immediate delivery. Every day of delay shortens your active boating season. Every week of delay is a tragedy. Still it's an old story—of owners waiting week after week for a new motor when their boats are all ready to go in the water.

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When you learn what a wonderful little marine motor the N.J.M. really is you would even be willing to wait for one if necessary—but it isn't necessary. Furthermore our new EASY PAYMENT PLAN enables you to use your motor while you are paying for it.



The N. J. M. Motor
with Safety Front
Hand Starter. A

very important feature when using a motor in a cabin cruiser or auxiliary sloop, where the flywheel is half under the floor and the rear end of the motor is under the companionway.

There is no extra charge over the rear hand starter with this additional attachment.

Write, wire or phone today
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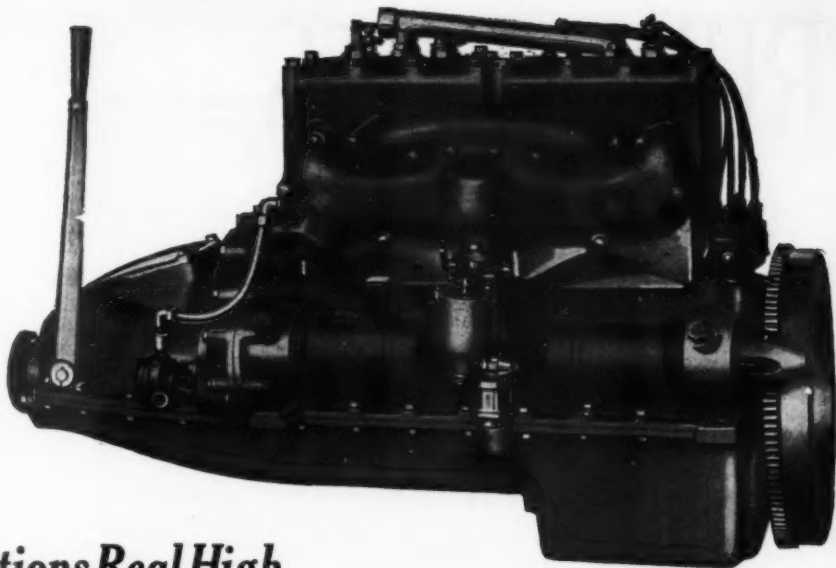
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"The motor that crossed
the Atlantic"

MODEL F-4**\$750.00**

Complete with
Electric Starter
15-40 H. P.
Medium Duty
40-60 H. P.
High Speed
Weight 550 lbs.
Length 44".



Set Your Expectations Real High --Then Be Agreeably Surprised

The boating fraternity and trade expect a whole lot from SCRIPPS Motors—observation of its performance for many years back makes this attitude only natural—excellence is expected as a matter of course. In spite of this the 1924 series is actually surprising them all.

Recent mails bring striking comments from well known figures in the trade and experienced boat men. Adolph Apel, noted boat builder of Atlantic City, N. J. "The F-4 has exceeded our expectations. Put it in an old race boat hull, built in 1913, and made an actual speed of 32 M.P.H. at 2200 R.P.M. A change of propeller wheel will bring this speed close to 35 miles. Considering this, an 11 year old boat giving practically 35 miles, we expect 40 miles out of our new design hydroplane we are building." Moffatt Motor Sales Ltd., Oshawa, Ont., Canada, "We were attracted by the Model F but hesitated to use it on account of it being a four cylinder job—afraid of vibration. After trying out the most surprising thing about it to us is not alone its high speed, power, nor its price, but its lack of vibration. We can distinguish no difference between it and the 8 cylinder motor first installed in the 21 ft. Ditchburn hull—we are now getting 28 M.P.H." Geo. T. Backus, Ft. Pierce, Fla. "Our sea skiff model (24 x 7') makes 21 miles all right with the F-4. Right here let us say that our skiffs do not make this speed with any motor but only with the right motor. We are advertising your SCRIPPS F-4 for this. This gives us the combination of two pieces of excellent workmanship and designing that is responsible for the remarkable records made." Doerflinger Machine & Boat Works, Sandusky, Ohio. "Everybody that sees my 'SCRIPPS' says there are no flies on that motor. I removed the inspection plates and am surprised at the quality. Have not seen anything finer in the highest priced motors."

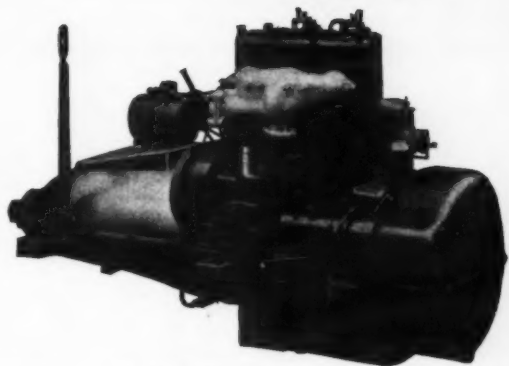
With all its refinements, power, Smoothness, Quietness, and Cleanness, the outstanding feature in every SCRIPPS is the peace of mind you have with one installed. Immediate delivery.

SCRIPPS MOTOR COMPANY

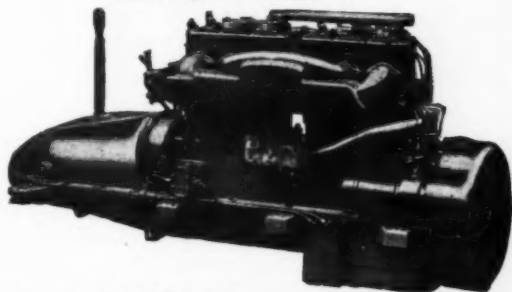
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10-12 H.P. Medium Duty
15-18 H.P. High Speed
Including Electric Starter

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"Sport" Model, 21' x 6'. Speed 22 miles.

Style, Speed and Beauty of finish

JUST think how much a Dachel-Carter Runabout would add to the enjoyment of your summer. Handsome in design, beautifully finished, fast, staunch and seaworthy. You would be proud of your boat in any company.

We also build Outboard Motor Boats, Rowboats, Sailboats and Cruisers—any size. Our plant is located outside of the high rent and high wage zone so we can give you the utmost value for your money. Many years of boat building experience insure quality of workmanship and finish.

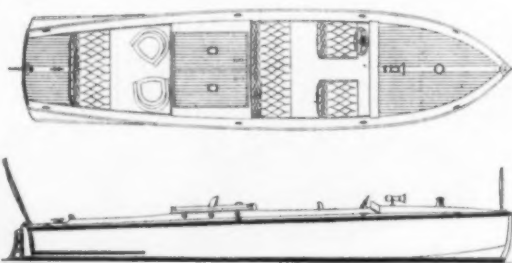
Send for details and prices of the "Sport" or "Mogul" runabouts stating speed or engine you want, or tell us your requirements if you prefer some other type of boat.

Write today.

DACHEL-CARTER BOAT CO.

Sales Offices: 53 West Jackson Blvd., Chicago, Ill.

Plant at Benton Harbor, Mich.



"Mogul" Model 20' x 6". Speed 25 miles.

Under the Jolly Roger

(Continued from page 128)

It was too funny to hear Scraggs jesting with death. Mr. Gibney forgot his own mental agony and roared with laughter in Tabu-Tabu's face. The cannibal stood off a few feet and looked searchingly in the commodore's eyes. He was not used to the brand of white man who could laugh under such circumstances, and he suspected treachery of some kind. He hurried over to join the king and the two held a hurried conversation. As a result of their conference, a huge savage was called over and given some instructions. Tabu-Tabu handed him a war club and Mr. Gibney, rightly conjecturing that this was the official executioner, bowed his head and waited for the blow.

It came sooner than he expected. The earth seemed to rise up and smite Adelbert P. Gibney across the face. There was a roar, as of an explosion in his ears, and he fell forward on his face. He had a confused notion that when he fell the post came with him.

For nearly a minute he lay there, semi-conscious, and then something warm, dripping across his face, roused him. He moved, and found that his feet were free, though his hands were still bound to the post, which lay extended along his back. He rolled over and glanced up. Captain Scraggs was shrieking. By degrees the bells quit ringing in the commodore's ears, and this is what he heard Captain Scraggs yelling:

"Oh, you McGuffey. Oh, you bully Irish terrier. Soak it to 'em, Mac. Kill the beggars. You've got a dozen of 'em already. Plug away, you good old hunk of Irish bacon."

Mr. Gibney was now himself once more. He struggled to his feet, and as he did, something burst ten feet away and a little fleecy cloud of smoke obscured his vision for a moment. Then he understood. McGuffey had a rapid-fire gun trained on the wari, and the savages, with frightful yells, were fleeing madly from the little shells. Half a dozen of them lay dead and wounded close by.

"Hooray," yelled Mr. Gibney, and dashed at the post which held Captain Scraggs prisoner. He struck it a powerful blow with his shoulder and Scraggs and the post crashed to the ground. In an instant Mr. Gibney was on his knees, tearing at Scraggs's rope shackles with his teeth. Five minutes later, Captain Scraggs's hands were free. Then Scraggs did a like service for Gibney.

All the time the shells from the Maggie II were bursting around them every second or two, and it seemed as if they must be killed before they could make their escape.

"Beat it, Scraggsy," yelled Mr. Gibney. He stood and picked up a war club. "Arm yourself, Scraggsy. Take a spear. We may have a little fighting to do on the beach," he yelled. Captain Scraggs helped himself to a loose spear, and side by side they raced through the jungle for the beach.

As they tore along through the jungle path Mr. Gibney's good right eye (his left was obscured) detected two savages crouching behind a clump of cocoa-palms.

"There's the king and Tabu-Tabu," yelled Scraggs. "Let's round the beggars up."

"Sure," responded the commodore. "We'll need 'em for hostages if we're to get that black coral. We'll turn 'em over to McGuffey."

"I'd better ease up a minute, sir," said the mate to Mr. McGuffey. "The gun's getting fearful hot."

"Let her melt," raved McGuffey, "but keep her workin' for all she's worth. I'll have revenge for Gib's death, or—sufferin' mackerel!"

McGuffey once more sat down on the cabin ventilator. He pointed dumbly to the beach, and there, paddling off to the Maggie II, were two naked cannibals and two naked white men in a canoe. Five minutes later they came alongside. McGuffey met them at the rail, and he smiled and licked his lower lip as the trembling monarch and his prime minister, in response to a severe application of Mr. Gibney's hands and feet, came flying over the rail. Mr. Gibney and Captain Scraggs followed.

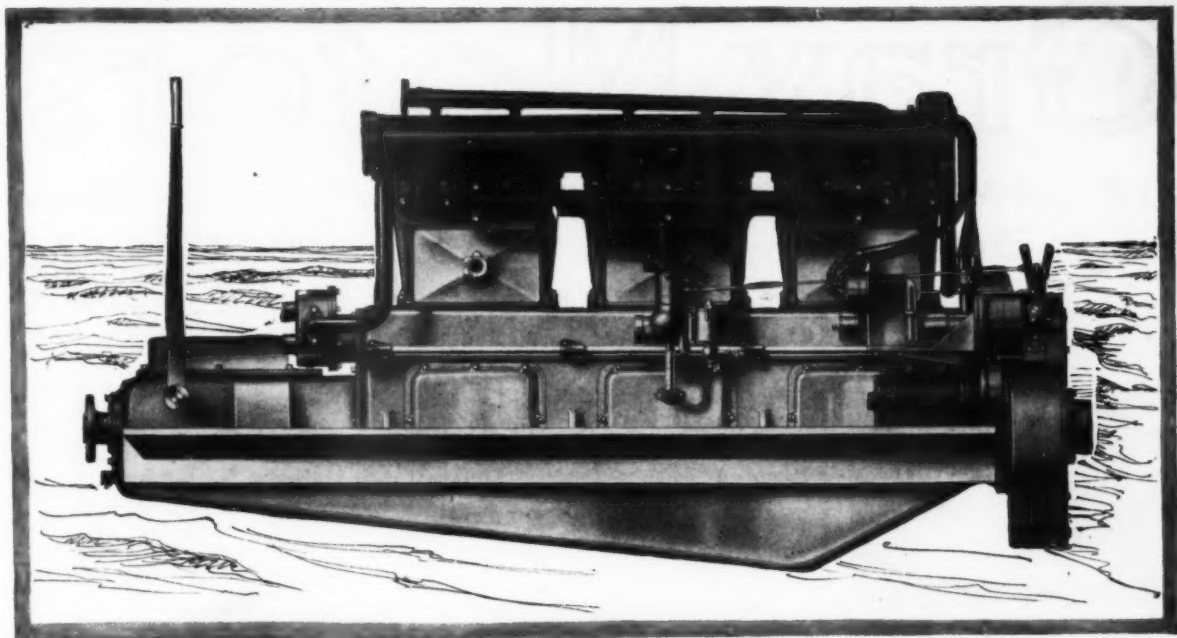
"I'm much obliged to you, Mac," said Mr. Gibney, striving bravely to appear jaunty. "One of your first shots came between my legs and cut the rope that held me, and banged me and the post I was tied to all over the lot. A fragment of the shell appears to have taken away part of my ear, but I guess I'll recover. We're pretty well shook up, Mac, old socks, and a jolt of whisky would be in order after you've put the irons on these two cannibals."

"You're two nice bloody-looking villains, aren't you?" was McGuffey's comment, as he surveyed the late arrivals.

"Which two do you mean?" inquired Mr. Gibney, with a touch of asperity in his tones.

"I dunno," replied McGuffey. "It's pretty hard to distinguish between niggers and folks that goes to work an' eats with 'em."

"Mac," said Captain Scraggs severely, "you're prejudiced."



GREAT FLEXIBILITY of SPEED CONTROL

A MOTOR with mighty reserve power, which is smoothly and speedily released when you need it. Operates at speeds ranging from 600 to 1200 R.P.M., developing approximately 1 H.P. for every ten revolutions.

Other Special Features

—Fly wheel and timing gears are at forward end of Motor.—Transmission at rear end when mounted in boat.—Engine mounted on Z-bars running full length. Easily set on timbers of boat.—Handholes give accessibility to crank case for bearing adjustment.—Not necessary to remove oil pan to adjust bearings.—Fly wheel completely enclosed.—Counter-balanced crank shaft.—Removable cylinder heads.—Cylinders carried in three blocks of 2 cylinders each.—Each cylinder has removable sleeve lining.—Dual ignition with 2 spark plugs per cylinder.—Exhaust manifold is water jacketed.

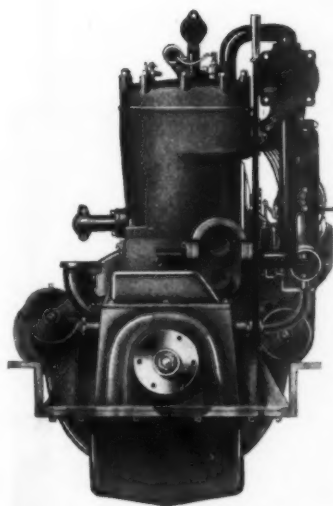
The Climax 6 Cylinder Model M R U Engine comes completely equipped with starting motor and circulating pump. Weight about 3000 pounds. **Write for Catalog.**

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**Model
M R U**

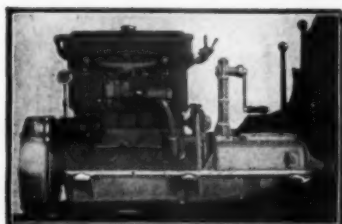
*We also make Model M T U 4-Cylinder
Engine suitable for work boats*

River Transit Co., St. Paul, Minn., writes: "Our best expression of the satisfaction we have had from this engine is the fact that we are now installing two more new Climax Engines."

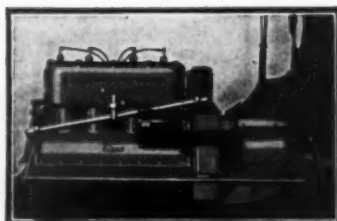
Gray Motors

are power plants of the Super-Service class

**Built by practical Motor Boat Men who
have been building and using Marine
Motors for thirty years.**



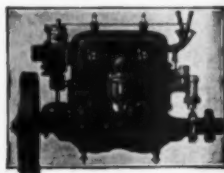
Model "V", $3\frac{1}{2}$ " bore x 5" stroke, from \$465 to \$720, depending on equipment, weight 550 pounds, used by United States Government, pressure lubricated, new catalog just off press.



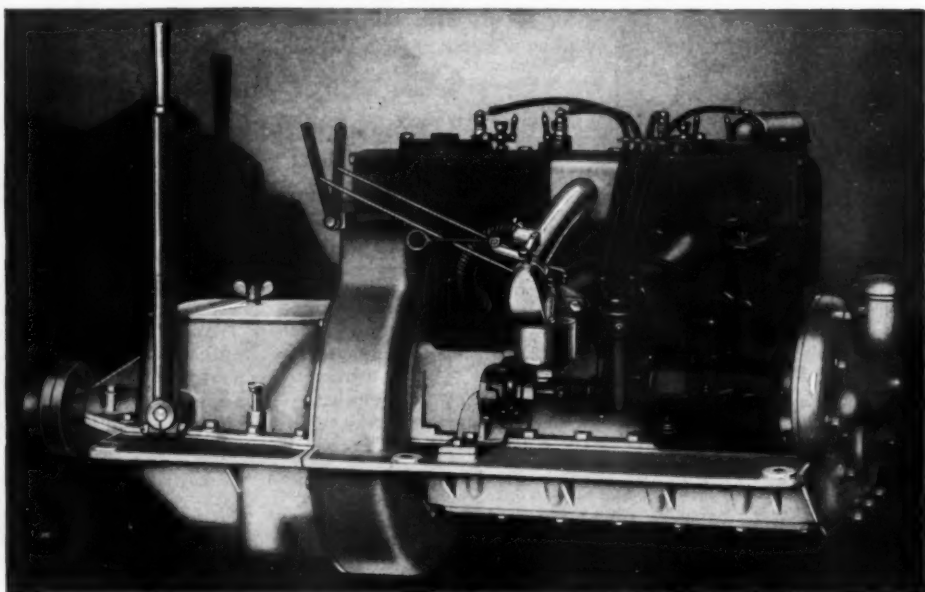
Starter side. Model "Z" Length $41\frac{1}{2}$ " over all. 62% of entire surface is aluminum. Greatest depth below base $6\frac{1}{4}$ ", Height $14\frac{1}{4}$ "

2 CYCLE,

3 H. P. to 8 H. P. New 2 cycle catalog sent on request. Standard the world over for 17 years, money-back guarantee, free trial. Write for new 2 cycle catalog



60,000 Gray users all over the world will tell how thoroughly good Gray Motors are.



Men who know tell us frankly that the new Gray model "Z" is the best engineered Marine Motor of its size ever offered. 30 years of Marine Motor experience concentrates its best and newest ideas into model "Z", shortest and lightest motor in its class. This is a 14 H. P. to 20 H. P., 4 cylinder, 4 cycle motor priced at \$395 complete and ready to run, including electric starting, lighting and ignition, instruments and storage battery, and is being shipped promptly on receipt of order. Standardized by leading Boat Builders in stock boats.

\$395
as shown
above

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Advertising Index will be found on page 136



For sure-fire ignition, auxiliary and lights

TWENTY-FOOTER or one hundred and twenty—you need Columbias. Columbia Battery ignition is inexpensive and you'll never find better for light craft. The careful skipper of a big boat always keeps a set of Columbias stowed away for breakdowns and emergencies. Necessary as the anchor!

Of course you want a deck light. Columbias will keep it bright. Good, energetic, reliable batteries. Full strength always. Fresh too—they sell so fast. Wonderful pick-up of new vigor while they rest.

Columbia Dry Batteries are sold by marine supply dealers, electrical, hardware and auto accessory shops, implement dealers, garages, general stores.

NATIONAL CARBON CO., INC., New York, San Francisco
Canadian National Carbon Co., Limited. *Factory and Offices: Toronto, Ontario*

Columbia Dry Batteries

—they last longer

Columbia Hot Shot Battery wears a water-tight steel case and likes rough weather.



Fahnestock Spring Clip Binding Posts on Columbia Ignitor at no extra cost.

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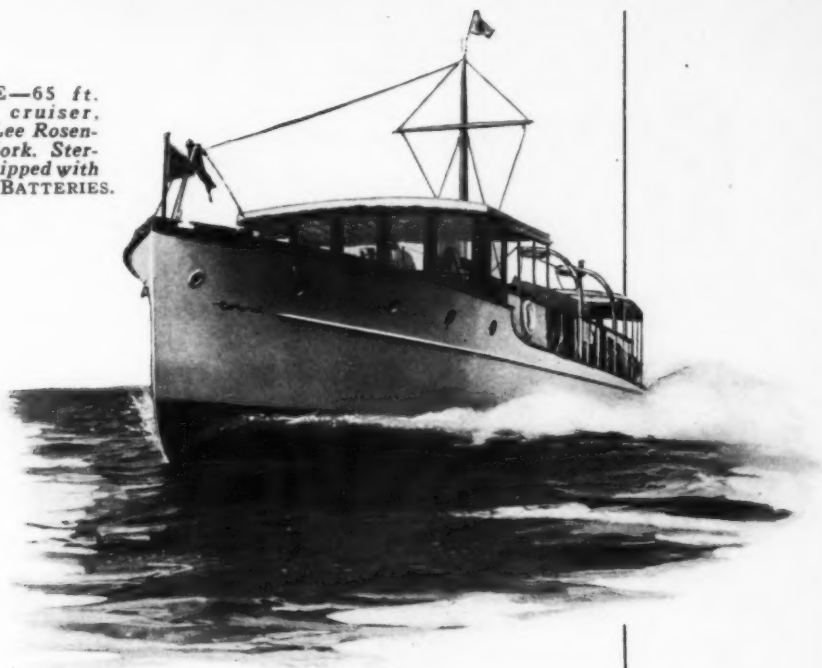
Splash!

Another boating season has arrived. Somewhere near a half million motor boats will be put in the water just about the time this issue of MoToR BoatinG reaches you.

It has been our privilege to help thousands of boatmen get ready for this season. Now we will help them through the summer, help them in problems of maintenance, navigation, cruising, racing and all other subjects that make boating a pastime of many sided interest.

We hope you will not miss a single issue during the coming year because we believe—and twenty-five thousand readers agree with us—that the information and entertainment contained in each issue of MoToR BoatinG is a big quarter's worth for any boating enthusiast.

POLLY LEE—65 ft.
Great Lakes cruiser,
owned by Mr. Lee Rosen-
berg of New York. Ster-
ling engines equipped with
WESTINGHOUSE BATTERIES.

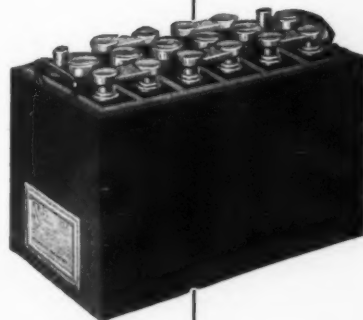


FAR OFF-SHORE and alone! Then's
when your power must be dependable!
And for dependable power you need de-
pendable ignition.

The ruggedness of Westinghouse Batteries, their fine engineering, thorough workmanship and high-quality materials and their oversize capacity, make them the choice of motor boat owners and builders who look for dependability first, and speed, beauty and luxury afterward.

There is a Westinghouse Battery for every size and type of motor-driven boat. When yours needs a new battery, consult the nearest Westinghouse Battery Service Station or dealer. Or, write to

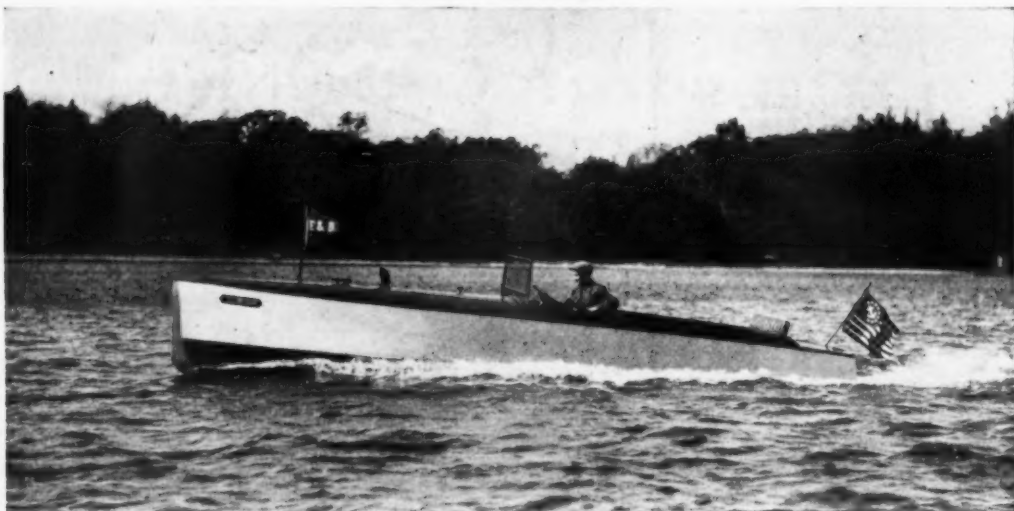
WESTINGHOUSE UNION BATTERY CO.
Swissvale, Pa.



WESTINGHOUSE BATTERIES



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York



F. & B. Junior Runabout

24 ft. long 5 ft. beam. Speed, 16 miles

AN extremely sensible boat is the Fay & Bowen Junior Runabout. Moderately fast but not so high in speed that either fuel economy or engine dependability must be sacrificed. Moderate passenger capacity with fixed seats for five and room for three or four wicker chairs. Moderately powered, having the new Fay & Bowen model LC-41, a 27 H. P. four cylinder engine with electric starter and generator; this engine is big enough to drive the boat at rated speed without apparent effort.

Let us send you further details of the Junior. Or if you prefer a smaller or larger boat, we have them in stock from 20 to 30 ft., with speeds up to 25 miles per hour.

Boat or engine bulletins forwarded on request.

Fay & Bowen Engine Co., 104 Lake Street, Geneva, N. Y.

Representatives

NEW YORK:

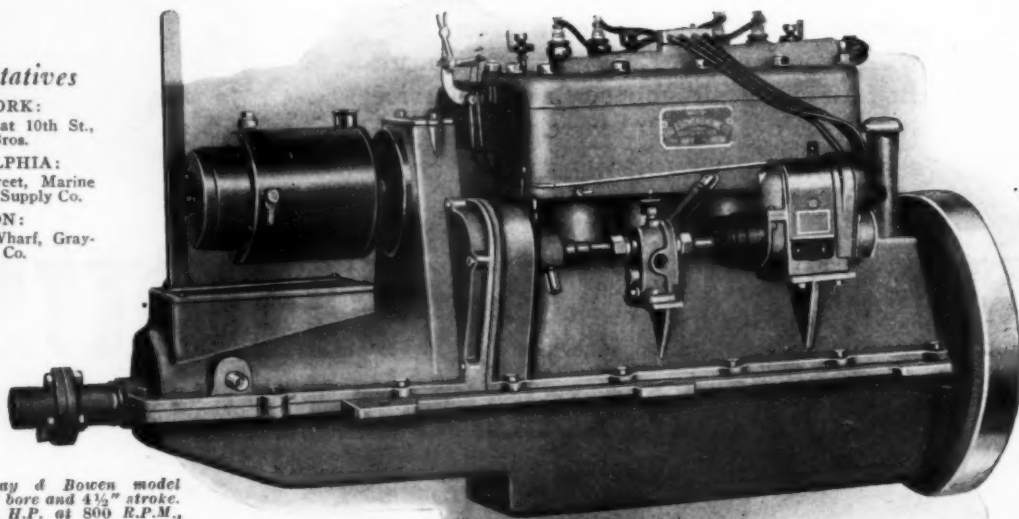
44 Third Ave., at 10th St.,
Sutter Bros.

PHILADELPHIA:

116 Walnut Street, Marine
Equipment and Supply Co.

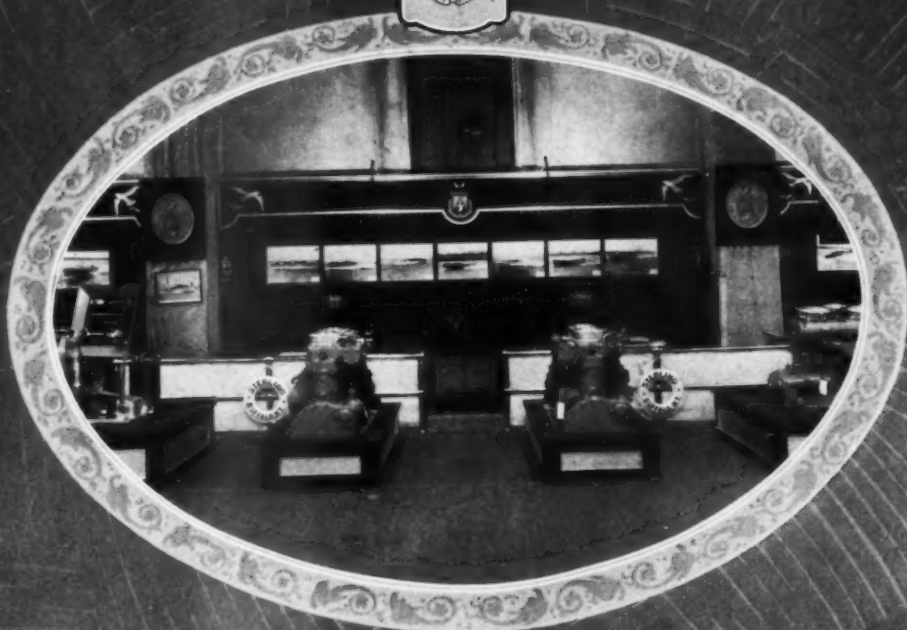
BOSTON:

6 Commercial Wharf, Gray-
Aldrich Co.



The new Fay & Bowen model LC-41 has 3½" bore and 4½" stroke. It develops 14 H.P. at 800 R.P.M., 18 at 1000, 25 at 1400, and 27 at 1600. The weight is 560 lbs. Other F. & B. engines from 14 H.P. to 85 H.P.

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STERLING ENGINES

At the National Motor Boat Show

DOLPHIN TRIDENT NEPTUNE
SEA GULL VIKING

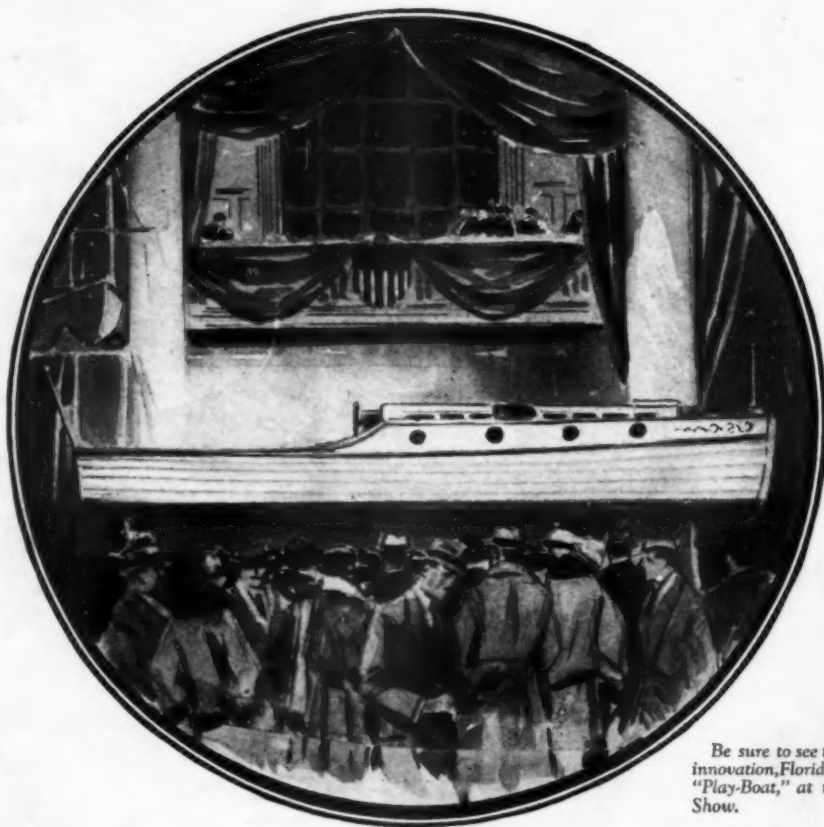
Two, four, six and eight cylinder Models for Cruisers,
Runabouts, Fishing Boats, Heavy Cruisers,
Workboats and Auxiliaries

Embodying the most advanced engineering
methods and practical sane construction.

SMOOTH CLEAN POWERFUL

12-300 H. P. Slow turning and high speed

STERLING ENGINE COMPANY
1254 Niagara Street, Buffalo, N. Y.



Be sure to see the innovation, Florida's "Play-Boat," at the Show.

At the Motor Boat Show

IT is the opinion of experienced observers that the 1924 New York Motor Boat Show will inaugurate a most brilliant year in the annals of American Yachting.

Anticipating the general increase of interest in the Show, we have prepared an exhibit surpassing even our own accomplishments of previous years as described below.

Florida "Play-Boat"—a 34-foot sea skiff model which has aroused the enthusiasm of every sportsman who has seen it.

High Speed Runabout—a new Consolidated design of V-bottom type 35 feet in length; fast and roomy.

Yacht Tender—16-foot Consolidated Yacht Tender of the type long in service with leading Yachts and Cruisers.

Coupe Yacht Tender—a swagger 37-foot boat for use as an auxiliary with fine Yachts; splendid for commuting.

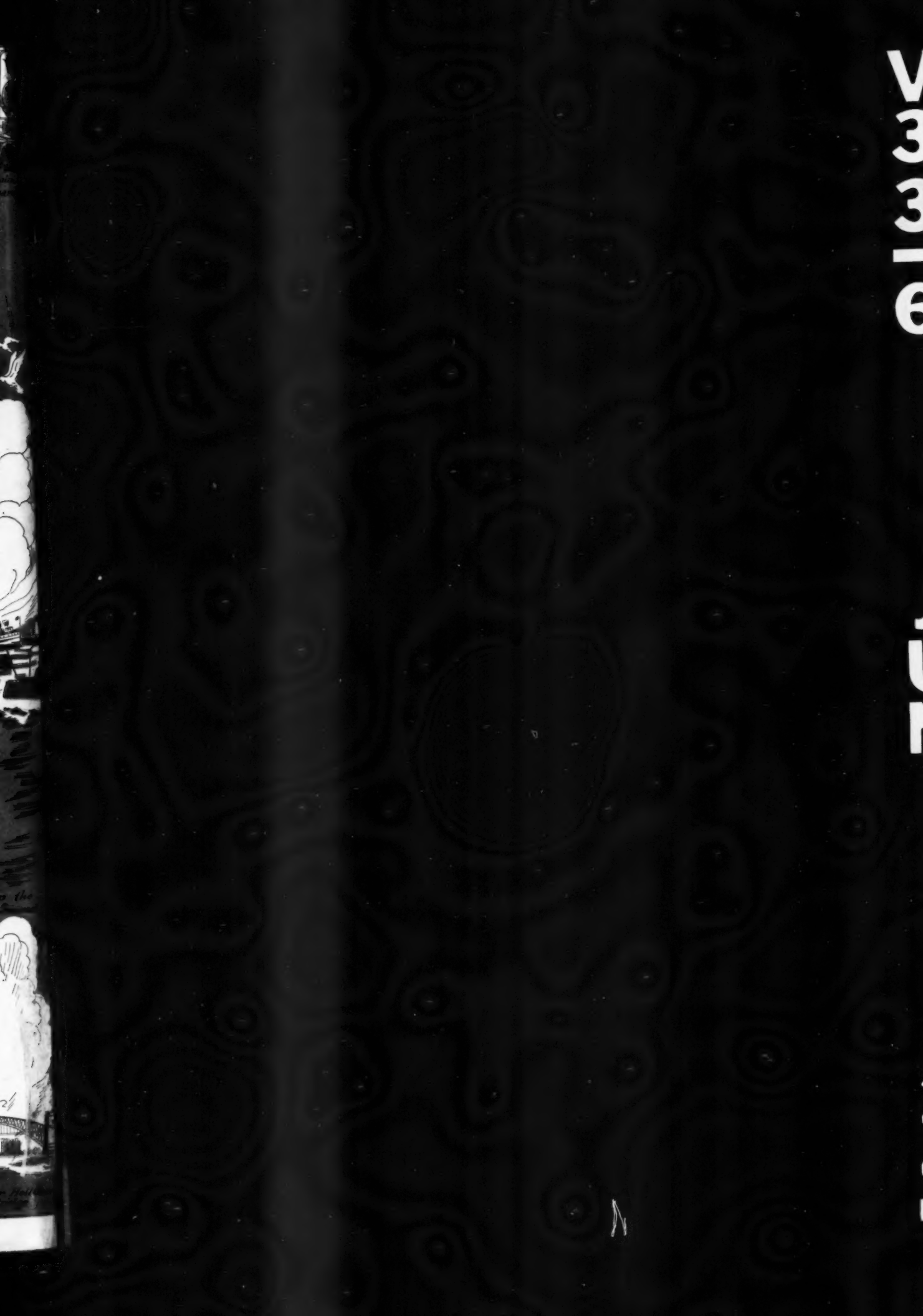
Speedway Engines—a most interesting exhibit of our complete Speedway line, including engines of from 20 to 300 H. P.

Those unable to attend the Show are invited to write for literature

CONSOLIDATED SHIPBUILDING CORPORATION

Morris Heights New York City
Southern Office (during the season) Miami, Florida





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